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T H E
C O M M E N T A R I E S
U P O N T H E
A P H O R I S M S

O F
Dr. HERMAN BOERHAAVE,

The late learned Profeffor of Phyfic in the
Univerfity of LEYDEN,

C O N C E R N I N G

The KNOWLEDGE and CURE of the feveral
DISEASES incident to HUMAN BODIES.

By GERARD VAN SWIETEN, M. D.

Translated into ENGLISH.

V O L. XVII.

L O N D O N :

Printed for ROBERT HORSFIELD, at No. 22, in Ludgate-Street,
and THOMAS LONGMAN, at No. 39, in Pater-noster Row.

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OMNIA T A R I S

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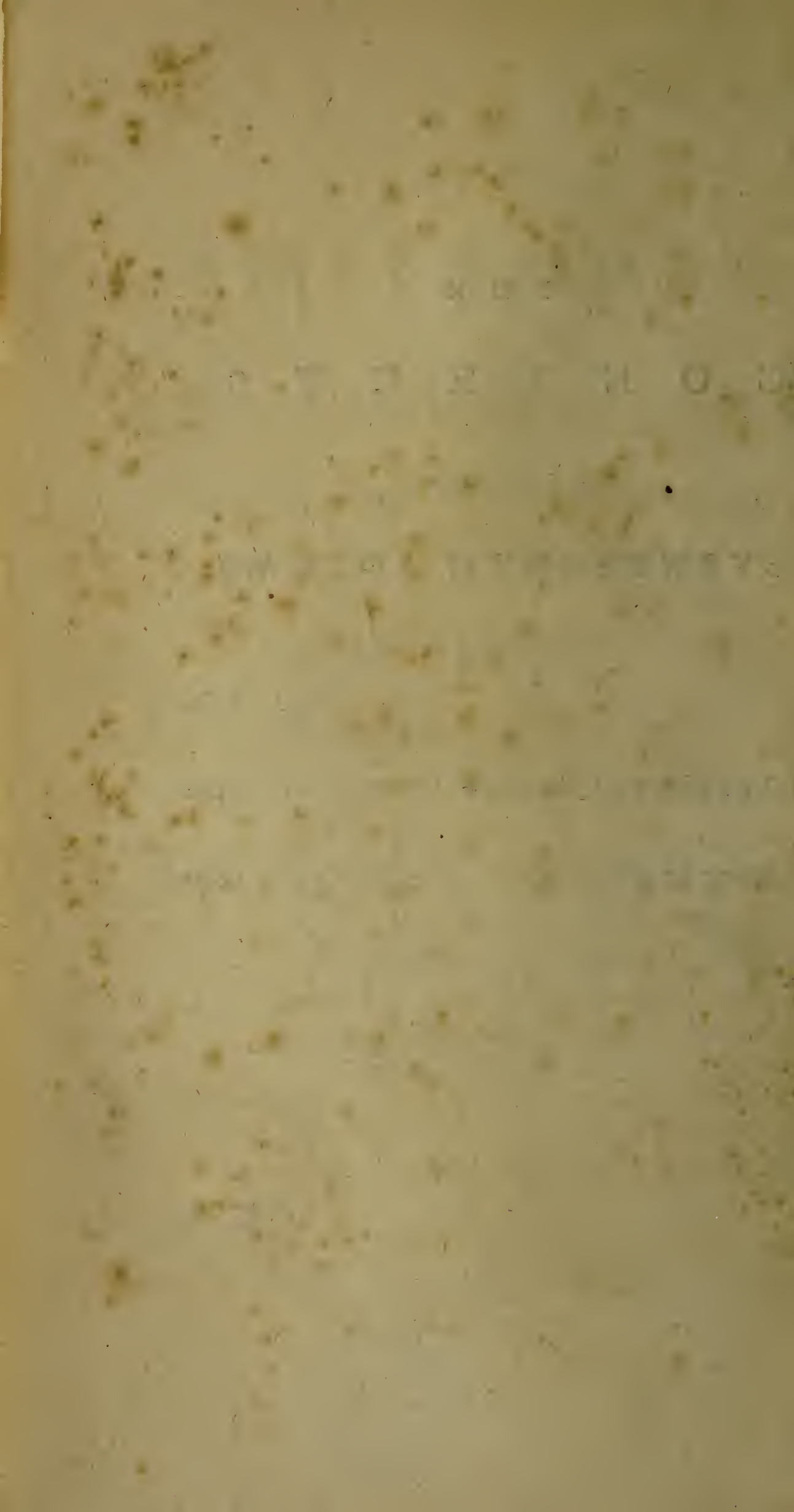
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OF THE
SEVENTEENTH VOLUME.

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COMMENTARIES

UPON THE

APHORISMS

OF

HERMAN BOERHAAVE.

CONCERNING THE

KNOWLEDGE and CURE of DISEASES.

The VENEREAL DISEASE.

SECT. MCCCCXL.

THE venereal disease took birth in the kingdom of Naples, in the year 1493, when it immediately raged in the French army there; and thence spread its severity until this day all over Europe.

This most terrible distemper had formerly various appellations given to it; for as it was alarming from its novelty, the names of those nations from whence it was thought to have had its origin, were set upon it. But it for the most part bore that of the nations which were neighbours, or connected by commerce; as the celebrated *Astruc* * with his accustomed

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* De morb. vener. tom. I. pag. 5, 6.

tomed erudition demonstrates, who wrote a complete treatise on this disorder, which I have read over and over to my great amusement, *Ne odia gentilitia inanibus jurgiis increbescerent novum Luis Venereæ nomen confingere in neminem contumeliosum, & ad significandum morbum qui venere contrahitur maxime idoneum*; “ This disorder therefore, “ to quell all vain quarrels, or spreading hatred “ among families or people, obtained this new and “ very proper appellation Lues Venerea, signifying a “ distemper contracted by venereal pleasures.” *Fernelius* was one of the first who used this term, which was afterwards retained by the rest of the faculty.

Siphylis is still a term frequently used to denote this disease. In defining the venereal disease, *Hieronymus Fracastorius*, and many other physicians too, ascribed the cause of this new disease *a coeli & siderum constitutionibus, quae & raro accidunt, & magna cum accidunt, possint efficere*; “ to the different constitutions of the heavens and stars, which but “ seldom happen, but may effect great matters when “ they do coincide.†” In his description of the venereal disease in verse, he ingeniously represents *Siphylis* feeding king Alcitho’s flocks, whose number and beauty make him proud and insult the sun.

— — — *Mihi mille nivis candore juvencæ,
Mille mihi pascuntur oves, vix est tibi taurus
Unus, vix aries cæto (si vera feruntur)
Unus, & armenti custos canis arida tanti.*

‡ Yet he concludes that not the sun but king Alcitho alone is to be revered, whose impious pride was immediately attended with a grievous pain.

— — — *Divum exhibitò gavisus honore,
Non ullum tellure coli, se vindice numen,*

Imperat,

† *Aphrodisiac.* pag. 202. A.

‡ *Ibidem* pag. 197. B.

*Imperat, esse nihil terra se majus in ipsa,
 Cælo habitare Deos, nec eorum hoc esse, quod infra est :
 Viderat hæc, qui cuncta videt, qui singula lustrat,
 Sol pater, atque animo secum indignatus, iniquos
 Intorsit radios, & lumine fulsit acerbo.
 Aspectu, quo Terra parens, correptaque ponti
 Aequora, quo tactus viro subcanduit aër.
 Protinus illuvies terris ignota profanis
 Exoritur ; primus, regi qui sanguine fuso
 Instituit divina, sacrasque in montibus aras,
 Siphylis, ostendit turpes per corpus Achores.
 Insomnes primus noctes, convulsaque membra,
 Sensit, & a primo contraxit nomina morbus :
 Siphylidemque ab eo labem dixere Coloni.*

Those who endeavoured to deduce the cause and origin of this foul disorder from the malignant aspects of the stars, could hardly think otherwise than that this venereal complaint had raised its head in former ages ; for the stars were not then destitute of the concurrence, seats, or influence to which this disorder may be now attributed : in changing their positions the disorder vanishes with the cause of its birth. *Fracastorius's* opinion is, that this disorder is of that kind which takes birth, ceases, and returns,

*Quam tamen (æternum quoniam dilabitur ævum)
 Non semel in terris visam, sed sæpe fuisse,
 Ducendum est : quanquam nobis nec nomine nota
 Hactenus illa fuit : quoniam longæva vetustas
 Cuncta situ involvens & res & nomina delet :
 Nec monumenta patrum seri videre nepotes **

But certainly the Lues Venerea has been known to exist for two hundred and seventy years, though the aspects of the stars have often changed in that time ; which does not at all favour that opinion.

Much hath been disputed concerning the origin of this disorder ; one question was, Whether it is a

* *Aphrodisiac*, pag. 184.

4 The VENEREAL DISEASE. Sect. 1440.

new one, or whether it was known and described by the antient physicians. This was argued with much contention and agitation by some physicians of great reputation.

It is very certain, that the genital parts in either sex are subject to many infirmities; yet that is no reason that these evils observed by the antients should derive from the contagion of the Lues Venerea. Every one may easily believe that these parts may by an unbridled sensuality become inflamed, exco-riated, or ulcerated, in a connection with women, whose privacies are retentive of various humours; such as are in the hottest climates chiefly collected between the prepuce and the glands, from which many evils undoubtedly might have been engendered; yet these were all different from the Lues Venerea: tho' nobody will deny that these, and such like singular symptoms, are observed to bear some affinity to the Lues Venerea; as hath been mentioned by antient physicians. But the concurrence of evil humours and train of symptoms by which this foul disorder is attended, have been in no place, nor ever will be, found amongst them.

Physicians were convinced of the novelty of this disorder, and undoubtedly saw it to be the Lues, about the end of the 15th century; they then attributed this strange scourge of whoredom to the malignant aspects of the stars, unaccustomed inundations, and divine anger of heaven: this evil would by no means obey the application of remedies; so that the cure of it was entirely despaired of, and the people refused their assistance to the miserable sick, who of their own accord left their homes, and kept company with some juggling mountebanks or fortune-tellers.

Some others, who either saw or read a description of the scurvy, itch, leprosy, evil, &c. began to compare these disorders with this new one, by turning
the

Sect. 1440. The VENEREAL DISEASE. 5

the Greek and Arabian doctors significations to their own purpose. These being versed in scholastic elegance, warmly disputed the matter for argument's sake against such as, candidly confessing their ignorance, affirmed that a new disease very pernicious was come to afflict mankind: these were accounted the least learned. It would be vain in me to dwell longer on this question, after the elucidation of this matter given us by the most solid labours of the learned *Astruc*, who, according to most people's judgment, has given the most ample account of it.* *Freindium's*† writings too, of the origin and progress of the Lues Venera, deserve to be read.

This disease had its beginning much about the time that *Christopher Columbus* returned from the discovery of America, as his son *Ferdinand* testifies in his history of his father's life; having also for some time accompanied him in his voyages, he made use of the letters and notes of his father, in his descriptions, from which he did not in the least vary, still adding what he was an eye-witness of.‡ The little tract, from whence I have taken these, deserves to be read: it was written by an eminent doctor, who chose to conceal his name, neither should he be named.

But he undertook many voyages to America. First he departed from the port of Palos, on the 3^d or 4th of August, 1492, then returned the 13th of March, 1493. He makes a second voyage on the 25th of September, 1493, returns from America to Spain the 8th of June, 1496. He goes out the third time on the 30th of May, 1498, and returns the 20th of November, 1500. His fourth and last voyage was from the 9th of May, 1502, to the beginning of the year, 1505, when he returned to Spain. §

B 3

As

* De Morb. vener. lib. I. toto.
part 2. p. 336. ad p. 386.
the venereal disease, p. 10, 11.

† Histor. of physic,

‡ A dissertation on the origin of

§ Ibid. p. 12.

As therefore the time of discovering the new world does sufficiently coincide with that in which this distemper appeared in Europe, it is no wonder that a new world should produce us a new disease. But all who were not of this opinion, for the most part, believed it not to be a new one, but known from antient times.

But this skilful author makes use of two kinds of arguments, to prove that the venereal disease was not brought from America into Europe; the first is a negative argument, viz. Those authors who wrote the voyages of *Christopher Columbus*, were silent in regard to the Lues Venerea; his second argument endeavours to prove, that this disease had its existence in Europe, before *Columbus* returned from his first American voyage.

All acknowledged the negative argument to be of less weight in determining the contention, beside, the cause of that silence in those late authors, about the institution of this disease, may be owing to some other motive which might oblige them to this silence, as may be seen from the above history; where the reason for not mentioning any thing of the Lues Venerea on *Columbus's* return from America, appears very clearly.

For it is known by what has been now said, that *Columbus* was seven months on his first voyage to the island of Hispaniola; that he delayed there to explore the riches of the new world, and then return; is it then credible that he employed any part of his time in searching out the American diseases; whilst the other more important object occupied his cares? It is rather more probable that he was entirely ignorant of this disease. I therefore shall conclude, that he could give no account of it in his first voyage,

It is farther argued, that *Columbus*, in his return being distressed for the want of water, put into *Lisbon*, where he met with a kind reception from king John the second, who cloathed all the Americans

ricans he had brought with him in scarlet : from whence the author would infer, that the Portuguese must have been infected with this disease, if those of the Spanish fleet, or the American passengers, then laboured under it. But their ship only put in there the 4th of March, and sailed for Spain the 13th of the same month ; so that the time of nine days could not be thought sufficient for propagating this disease in Portugal by the Americans ; neither could it be communicated by the seamen in cleaning their vessels, taking in water, guarding their ship, or by their other marine occupations ; and Columbus undoubtedly presented the soundest of his Americans to the king, that they should not contract any ailment from the rest, if in case they were infirm or diseased in the voyage.

Nor would the captains of ships, who put into the same port through necessity, allow their crews to wander about without leave for attending some necessary call, especially as they were generally ready to sail again ; for they well knew that the tempers of sailors must be subjected to strict or severe discipline, as they are prone to disorderly behaviour, and a desertion from their stations ; which inconveniencies it was thought imprudent to expose the metropolis of Portugal to.

These reasons, which seem sufficient to demonstrate why the Portuguese were not then infected with that disease, at the same time account for the silence of the authors, who wrote of *Columbus's* first voyage : when he arrived in Spain, his sailors successively went to see their friends as usual upon these occasions ; and if any amongst them were infected, the disease must have been then propagated : it may be that all its consequences were not immediately known, as the body nourishes this disease rather with a slow than a quick progress, and as the Spa-

* A dissertation on the origin of the venereal disease, p. 13, 14.

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niards must have been ignorant of the nature of this new evil in its commencement.

It happened at that same time, that a new expedition into America occupied the attention of all people, and *Columbus*, on the 25th of September, 1493, sailed there with seventeen ships, and had a prosperous voyage that same year.

The companions of *Columbus's* first voyage might, during their six months stay for a second voyage, have become infected; for the poison might continually glide through the blood during this time; or it might be that it had not yet been known to be of so dangerous and contagious a nature. Then as *Columbus's* second voyage was longer than the first, not having return'd until the 8th of June, 1496, the Spaniards could during this interval of time observe the progress of the disease, and all its foul symptoms, with more convincing speculation.

That this might be the case appears by the words of *Oviedo*, taken from a learned author;* for he says, he had seen one of *Columbus's* companions, who returned with him from America in 1496, named *Moses Peter Margarita*, who continually complained of a very bad state of health; he believes him to have suffered the same torments that attend the venereal disease, though he saw no ulcers or buboes on his body. Thus *Oviedo* had cognizance of this disease and its signs, at *Columbus's* return from his second voyage; and as he knew the signs that accompanied it, he must have before known it in its maturity: it is therefore natural to imagine, that it had footing in Spain, before *Columbus's* second return. He tells us he had perfect knowledge of this disease, and suspected this man to have contracted it, though no external signs of it appeared on his body; he farther adds,† that immediately afterwards, in 1496, this disease invaded the court, though it at first
attacked

* A dissertation on the origin of the venereal disease, p. 29, and in note. † Ibid. p. 30.

attacked the common people ; and its origin was certainly held to proceed from pernicious venery. This is a reason why *Oviedo* makes no mention of this disease in *Columbus's* first return, as he then knew it not, for it but gradually increased : At the second time of *Columbus's* continuance in America, and at his return in 1496, many were afflicted with it, and observing that many of those who returned in the same year with *Columbus* from America, were afflicted with it, he might justly have concluded, that this Lues Venerea was brought from America into Europe ; where it was until then unknown.

If therefore this foul disorder was, by the habitude of venery, so soon contracted and begun in Spain, as in the year 1493, it will not seem wonderful that it visited Italy and France in 1495, as hath been already observed.

Another kind of argument supports this disease's pre-existence in Europe, before *Columbus's* first return from America : this is insisted upon and proved by a learned author, and the united testimonies of *Baptista Folgosa* and *Caspar Torella*,* who will have the Lues Venerea to have been already known in Europe, in the beginning of the year 1493, just at *Columbus's* return from America, March the 4th.

But the testimonies of these two authors cannot be altogether depended on, for *Folgosa* says,† *Quæ pestis (ita enim visa est) primo ex Hispania in Italiam allata, ad Hispanos ex Æthiopia, brevi totum orbem terrarum comprehendit* : “ This plague (as it is so observed to be) was first brought from Æthiopia “ into Spain, from Spain into Italy, and then spread “ in a short time round the world.” But *Caspar Torella* says, that the disease began in France, in the year 1493 ; so that it came in the manner of a contagion into Spain, the islands of Sicily in Italy, and so ranged over Europe ; or if I may say, over all the

* Ibid. p. 17. † A dissertation on the origin of the venereal disease, lib. I. cap. IV. in fine, p. 29.

the earth :† besides, it is to be observed, that when *Torella* wrote a treatise of the *pudendagra*, published in 1497, at Rome, in which he styles himself bishop of St. *Justa*, he says, that as he then occupied himself during ten years in ecclesiastical affairs, he could not well discharge himself in the practice of physic; beside he seemed not to be a religious observer of truth, for he heaped many shameful adulations upon Cæsar Borgia, one of the most abandoned men of the age, in his *Epistola Noncupatoria*, and in this treatise of his, entitled, *de Dolore in pudendagra*, which he published about the year 1500. This work contains a dialogue between the common people and a physician, wherein the Lues Venerea and its origin are discussed ‡ as follows: *Gallis manu forti Italiam ingredientibus, & maxime regno Parthenopæo occupato, & ibi commorantibus, hunc morbum detectum fuisse. Idcirco ab Italii Morbum Gallicum cognominatum esse, imaginantibus, ipsum Gallis connaturalem esse: in Gallia vero, quia, in reversione Regis Caroli cum suis in Galliam, hic morbus apparere incepit, credentes Gallos eum ex Neapoli apportasse, hanc ob causam morbum Neapolitanum vocavisse.* || “ A strong body of French going
 “ into Italy, had occupied the Neapolitan empire,
 “ and having a while remained there, this disease
 “ was discovered. This amongst the Italians was
 “ called the French disease, they imagining it to be
 “ natural to these people, because it began its appearance amongst them at king Charles’s return
 “ thither with his people, who believed it to have
 “ been brought from Naples, and for that reason
 “ called it the Neapolitan disease.”

Therefore, as these two authors disagree in their accounts, their testimonies admit not of that support that a learned author attributes to them.* This he is sensible of, whilst he waves the opinion § of these authors

† Astruc. de morbo vener. tom. 2. p. 569. ‡ Ibid. p. 571.

|| Ibid. p. 572. § A dissertation on the origin of the venereal disease, p. 17. * Ibid. p. 9.

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authors in another place, and contents himself in demonstrating the Lues Venerea to have been known in Italy and France, about the beginning of the year 1495, or at least in the month of June in the same year: how this might have been, has been before explained.

Yet from these arguments a learned author's * opinion is, that nothing is more certain than that the Lues Venerea is an epidemical distemper bred in Europe, and carried by Europeans into America. He states the cause of this epidemical constitution to be due to many great floods in various inhabited places of the globe, attended with an unaccustomed temperature of the air. It is very certain, that the worst of infirmities are produced by such causes; but it is equally certain, that the Lues Venerea was never before produced by them. We learn from innumerable observations, that the most malignant fevers are engendered by them in men who inhabit those places where the floods leave a quantity of mud, which putrifies by the heat of the weather. I have enlarged more upon this subject in the chapter *de morbis Epidemicis*; but it does not appear that the Lues Venerea ever had its birth from any such cause in our times. From hence I cannot therefore see where this disease could have its origin.

Sydenham, † whom an expert author amongst the most speculative observers of epidemical diseases very deservedly praises, believes not the Lues Venerea to be an epidemical disorder bred in Europe, but brought to us from some distant region; nor does he think that the contagion of the endemial disease ought to have abated, whilst it is transferred from a hot into a cold region; in no wise could an argument be maintained against that opinion, stating this epidemical disease to have been brought into the most hot countries by seamen, where it largely operated,

* A dissertation on the origin of the venereal disease, p. 75.

† Epistol II. respons. p. 211.

operated. Besides it has been remarked, that the northern parts of Europe have not at all been free from the Lues Venerea: for *Fracaſtorius* † thus obſerves: *Conſtat, aut eodem tempore, aut fere eodem, & in Hiſpania & Gallia, & Italia, & Germania, & tota fere Scythia, viſam fuiſſe: adde, quod prædixiſſe illam aſtronomos certis ante annis, non parvum indicium eſt, aliud ipſi ſubeſſe principium, quam ſimplicem contagionem:* “ That much about this time it was ſeen in
 “ Spain, France, Italy, Germany, and almoſt all
 “ over Scythia; add to this, that ſome certain
 “ aſtronomers predicted about it, not many years
 “ ago; which is no ſmall testimony that it has
 “ ſome origin different from a ſimple contagion:” for it can ſcarcely be conceived, how this evil could ſo ſoon and extenſively ſpread, if merely from contagion it took its birth: he therefore firmly believes, it hence attacked innumerable people, though no contagion had preceded.

But the following aphoriſm ſhews how a contagion may be communicated to a ſound body in various manners, ſo that a diſeaſe may follow; and it ſeems very probable, that whiſt this new diſeaſe made its attack in the beginning, that men were not guarded againſt the contagion, until they ſeverely felt that great care muſt be taken not to converſe with perſons infected: moreover, as it is not only a troubleſome and painful, but alſo a filthy diſorder, many would conceal it; whence many others have been infected by it. It is to be remarked alſo, that an epidemical diſeaſe cannot ſubſiſt for any long ſeries of years, but whiſt they are received from other ſubſequent diſeaſes; for they become ſilent and entirely vaniſh, and in ſome years after return again: this manifeſtly appears in *Morbillis*, *Ephemera Britannica*, the ſmall pox, the measles, the *Dysentery*, &c.

But the Lues Venerea entirely differs from the manner of this epidemical train: for from the firſt time

† Lib. II. de morbis contag. Aphrodiſiac. p. 201.

time in which it was known, it constantly remained, never disappeared, was always an infamous contagion; and though some change might have been observed in its symptoms, (more of which hereafter) it has continued to reign for above two hundred and seventy years, and a great number of infected persons still remain. Was this ever observed in any other epidemical disorder? Moreover it is not to be wondered at that physicians will sometimes disagree in such-like enquiries; yet this will not hurt the sick. I have here freely given my opinion, besides I willingly leave the same liberty to all others studious of this matter.

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THIS is a contagion contracted by generation, suckling, touching or handling, saliva, sweat, a genital liquid, exhalation.

It is remarked, that by this contagion the disease may propagate from one infected person to another; nor is this denied by those who affirm that the Lues Venerea was not brought into Europe by contagion; but that it was produced to us by some other epidemical causes; nor that the American inhabitants had not contracted this disease from the Europeans.

Then as the Lues Venerea is deservedly termed the lash of sensuality, it may be propagated chiefly by impure venery; yet men who sometimes live the most continent and secure from infection, may by divers other manners contract this foul disease.

By generation.] It will not seem wonderful that the infants of those parents infected with this disorder, come forth defiled into the world; for it will afterwards be manifest, that the venereal virus, mixt with circulating humours, may be carried off from the mother before it be again deposited in certain parts
of

of the body, yet the living foetus will continually partake of the defiled humours of the infected mother; so that the contagion may be engendered in the womb before birth. Labat* testifies, that American infants have been infected at their birth, though even their parents and nurses were sound, (or as he prudently adds) at least seemed to be so; but this testimony seems to be of no great moment, as he affirms the Dutch, in the same place, to have been immediately infected on arriving at their American colonies, before they had any connections with the female natives of that country; but these enjoyed better health in those places where the pools were afterwards dried up, and the stagnated waters begat motion; and especially after thick woods were cut down, the trees eradicated, the winds uninterrupted in their course. But before all this could be perfected, it was remarked, that the first colonies of these Hollanders laboured under very malignant fevers, and other distempers entirely different from the Lues Venerea, which he seemeth to have confounded with them.

An infant may be infected in the womb of the mother labouring under this disease. This seems to be very likely, *Imo compertum est, ab infecta matre partus edi squalidos, semiputres, ulcerosos, vere syphiliticos*: † “for it is proved, that children
“come forth filthy, half rotten, full of ulcers,
“and truly infected with the venereal disease.” But it is justly to be doubted, whether the venereal poison could be infused into the embryo by either of the parents, so as that the child might have no complaint until arrived to adult years, and then be attacked with a real venereal disorder, without any new contagion attending it: this is scarcely credible, as the venereal virus is communicated to children immediately by suck, or in some other manner; and then it miserably preys
on

* Nouveaux voyages aux îles d’Amerique, tom. II. p. 120.

† Astruc. de morb. vener. lib. II. cap. I. p. 121.

on those parts it occupies, according to many judicious observations. Astruc † (so skilled in the steps of this disorder) *Confirmat, se nunquam observasse, luem veneream, vere sic dictam & pathognomonicis signis conspicuam, jure quasi haereditario, in infantes transmissam*: “ affirms, that he never has truly observed “ the venereal disease, in the manner it is represented by the pathognomic signs attributed to “ it, transmitted by hereditary infection to children.” But that the patient’s reputation might be preserved, together with peace between man and wife, some prudent physicians, though almost convinced of it, seem to start it as probable; for it is sufficient that a doctor knows the present disease and its cure; for this contagion might have been communicated in a manner which he may be yet ignorant of.

Yet it is to be remarked, that a foetus which lived sound in the womb, might have been born infected; for if any ulcers are in the privacies of the woman, and the infant’s head, or any other other part of the body, adhere there for any long space of time, in an unnatural birth, it is smeared with the corruption of the venereal contagion, and the midwife may also become infected; as hath been often observed in such a case. But the virus imbibed in such a case will not remain still until the child ripens into years, but will manifest the filthiness of the disorder in a short time after the birth. This should be principally dreaded, if the infant be thus long confined in the narrow passage of its birth; for being then immediately washed, according to custom, it may avoid the contagion; by which the midwife will be infected. *Antonius Gallus,** a celebrated physician of Paris, who wrote a treatise in the year 1540, *De ligno sancto non permiscendo*, avers, *se obstertricem novisse, quæ, dum mulieris inquinatæ partum exciperet, hoc morbo correpta fuit, nulla tamen fœtui noxa*

† Astruc. de morb. vener. lib. II. cap. I. p. 121.

* Aphrodisiac, p. 463.

noxa communicata. “ that he had known a mid-
 “ wife, who had contracted this disorder by deliver-
 “ ing an infected woman; yet no hurt had been
 “ communicated to the foetus.” This must be
 owing to the midwife’s hands having frequent access
 to the filthy ulcerated vagina, before, in, and after
 the birth, in extracting the after-birth, &c. Therefore
 the same author † tells us, *aliquam moram esse oportet, ut corpora hanc maculam concipiant: alioqui non carerent periculi suspitione, qui illorum tractant ulcera. Hoc autem malum vix ab interiore nascitur alteratione; sed externa origo est:* “ that some delay in the ope-
 “ ration must have caused a communication of this
 “ contagion; and as it may be thus, and otherwise
 “ contracted by manual operations, those who dress
 “ these ulcers cannot be free from suspicious fears
 “ and danger. This disorder seldom arises from
 “ any interior alteration, for its origin is entirely
 “ external.”

Suckling.] This infection will soon be commu-
 nicated in sucking a woman’s breasts, as the follow-
 ing observation informs us. ‡ A certain woman
 accustomed to draw or suck the breasts of lying-in
 women, had a venereal ulcer in her mouth, which
 she concealed that she might not lose her daily de-
 pendance for bread: thus she infected some women
 of the better sort to a miserable degree. The cele-
 brated doctor Barry, having an opportunity of visit-
 ing these infected matrons, was astonished at the
 malignant progress of this disorder; which he de-
 scribes it to be: first the breasts of these women were
 lightly inflamed, then the skin fell off, then a number
 of red pimples spread around the excoriated parts
 of the breast, and from these issued a thin ichorous hu-
 mour, which would have formed them into ulcers,
 if some medicines were not timely applied to them;
 a little after, their private parts were infected and
 attacked

† Aphrodisiac. p. 463.

‡ Med. essays and observat. tom. III. no. xxi. p. 323. & seq.

attacked with a vehement itching; these parts were over-run with ulcers, from whence a little matter issued; and in a little time their bodies were over-spread with pimples or boils; this disease thus far made its way in the space of three months: the husbands of these women were also infected and tormented with shancres, from which the venereal poison so soon dispersed, that they had ulcers in the insides of their mouths, and red boils all over their bodies.

This woman, who had been the cause of so much evil, was found when examined to have had a small ulcer at the root of her tongue, and a large fresh cicatrix on the inside of her lower lip: she obstinately denied to have ever had an ulcer where the cicatrix was; but she afterwards confessed the truth, saying, she had concealed the filthy evil, lest that scandal or the loss of her earnings might be the consequence, if she confessed it sooner.

Though the doctor had then strictly examined her all over, he could find no cutaneous eruption about this woman; neither did he find the venereal virus to have lodged but in the internal parts of her mouth.

This woman sucked the breasts of many other matrons, who had received no damage from her; but the reason of that happiness was then due to the cure of her under lip.

Infants that suck the breasts of their mothers when infected will be also infected, and the greatest part of them perish; so that it is but adding more speed to the course of this disorder, when communicated by suckling; by salivation a physician is immediately to labour against so great an evil, in such as appear to be slightly infected.

I have myself seen a little boy who was so miserably attacked with this disease, that he perished in three weeks time; this was owing to the want of a sound nurse, for his had had the palate of her

mouth all torn with venereal ulcers of a filthy nature; I was called upon too late to assist her with any remedy. We read that a whole town had been totally infected, and that other women noted for their charity, had given their breasts to two infants then cast out and infected with that disease. *

By touching or handling.] If the midwife had been infected in the manner before said, in assisting the lying-in woman, it is no wonder that the same danger will attend those who venture to touch those places where all this venereal filth remains.

By spittle.] Which of all other causes is the most dangerous, if lascivious youths kiss women who have venereal ulcers in the inside of their mouths; but as this is a prelude to coition, it can be hardly determined whether to the kisses and meeting of their tongues alone (as the young sons of Venus express themselves) the ensuing disorder should be ascribed or not; if the chaste matrons were infected by the foul woman's sucking their breasts, it is easy to apprehend the same danger from the lips and tongues not covered with a thick skin; if the venereal virus be communicated by the saliva to those parts, does this virus easily unite itself with the saliva? So many believed whilst they saw the virus expelled by salivation.

By sweat.] All men have known the cure by perspiration, especially after the use of a large decoction of guaiacum wood, which has often proved the most specific remedy for the venereal distemper (of which we shall make mention hereafter); in such a case, the virus flows from the body all over the surface of the skin; from whence it will be dangerous to sleep in the same bed with infected persons, especially if they sweat plentifully; for the vaporous sweat exhaling from the infected body, may be easily resorbed, at least by those parts of a sound man where the vessels are more spongy and apt to im-

bibe

* Vercellon de pudendor. morb. cap. IV. p. 205.

bibe that moisture ; in like manner it is believed to be communicated by bed-cloaths, linen, or other wearing apparel, if used by a sound man after an infected person ; the propagation of this disease may be so termed when spread by fomentation ; * and this contagion is to be dreaded by those who drink out of the same vessel with an infected person, or wipe their mouth or lips with the same napkin. This celebrated author relates many more cases in the same place, which he collected from different authors who argue the possibility of such an infection.

But as all these were taken from the narrations of infected persons, there is some reason to suspect them to be nothing more than a fictitious imposition. As these infamous connections are shameful, it is probable that the men and women, who still uphold the cause of such a distemper, have a more uncontested right to acquire the venereal disease.

Yet as from the poison of the measles, it appears that they are engendered by a fomes ; they can also be quickened and propagated. A celebrated author subjoins the following sentence : *In summa, nollem equidem eam contagionis viam pertinaciter negare — — Verum enim vero vellem multo minus eundem contagionis modum pro comperto admittere, cum experimentis, quæ omni exceptione majora sint, nondum liqueat.* “ Upon the whole, I would not indeed “ obstinately deny the progress of that contagion ; “ yet I would not take this contagion for granted, “ since it is not proved by unexceptionable experiments.”

Yet the testimony of *Hildanus* seems to be of great weight ; for he says, he sometimes observed that the venereal disease may be contracted from the sweat or cloaths, or the excremental ulcers of persons infected ;

* Astruc de morbis venereis, lib. II. cap. I. p. 122.

20 The VENEREAL DISEASE. Sect. 1441.
fected ; nor does he bring this assertion from a vulgar example.

A noble young lady, fifteen years of age, was amongst a parcel of bacchanalians, where she, and some other girls took the indecent liberty of changing cloaths with the young men : thus vested, she felt great pain and an itching about her pudenda, and immediately some boils and malignant ulcers broke out. She, through shame, concealed the evil until overcome with pain, and being no longer able to walk, discovered it to her mother : *Hildanus* being sent for, found part of the neck of her bladder, and womb, and pudenda, with most filthy ulcers, which eat away to her intestinum rectum, together with the sphincters of the bladder, and intestinum rectum already corroded ; from whence an incontinence of her excrements ensued. She laboured under very grievous pains, attended with a continual burning fever for some days, until she died.

This miserable young lady, even to her death, affirmed she had never had any connection with a man : then, upon examination, the young man whose breeches and cloaths she had put on, was found to be most severely infected with the Lues Venerea.

Some other observations teach us, that a man may be infected with the point of a surgeon's lancet, in bleeding a sound man immediately after the same operation upon a distempered person. We have many such singular observations from the celebrated *Astruc* ; * but first let those we have from *Schenckius* † be deservedly read, concerning this new distemper in Moravia, which the people called *Brunnum Gallicum*. In the year 1577, on the 11th of December, the winter being then very sharp, all those who

† Observat. centur. I. p. 75.
lib. vii. p. 912, 913.
p. 816. & seq.

* De morb. vener. tom. II.
† Observat. medic. rarior. lib. vii.

who went to a bagnio, having applied cupping-glasses and scarification, were attacked by a distemper which had almost every symptom of the venereal, which in some remained concealed for eight days, in others during a fortnight, and in some others during a month; then some unusual heaviness, dejection of spirits, a sorrowful countenance, and grim looks preceded this disorder; a burning heat raged through all the swelling traces of the cupping-glasses, which was followed by a train of boils and putrid ulcers: it was a wonder, that all the tracts of these glasses did not turn into ulcers, for only one or two of them at the most did so; and a woman, who had fifteen of these glasses applied to her, had but three ulcers from them. The boils deformed and defiled the body, together with scurfy ulcers and foul scabs, which discharged a thick corruption and tough mucus, rather like pale white corruption, than good matter. In the progress of the disease, some scales grew upon the head into hard lumps or warts, which, when broken or cut, discharged a viscous matter, in the slow manner that trees do their gum, or sweat by a watry disease attending them also; all this was attended with nocturnal acute pains, chiefly about the back and shin-bones: though many were thus afflicted, it appeared that they were only those who at the bath applied the cupping-glasses and scarifications to themselves; for they were all alike tormented with the same evils.

The chief magistrate enquired into the cause or origin of this distemper, with all possible care; but could find no fault with the master of the bath. The servant was then suspected, who for the agility and promptitude of his hand in the operation, had the office of scarifying delegated to him. He, rather terrified with threats than distrusting the justice of his cause, betook himself to flight, nor did he ever appear; from hence no certainty of the cause remained. Some more accounts of diseased persons

are afterwards given, who laboured under this distemper; from which it plainly appeared, that this distemper would yield to no other remedies but those commonly used to cure the venereal disease.

* From Botallus we read another example of the Lues Venerea communicated by fomes, to a man who drank out of the same vessel with another, who was infected with that disorder; nor do the reasons, which *Botallus* believes to support the truth of this matter, appear unworthy of regard. The person diseased was a man of approved credit, nor had he any reason to conceal any other cause so affiduously: besides, the man from whom he said he had received it, was well known by *Botallus* to have laboured for sixteen months under that disorder, in the most racking torment: *Ossi quoque narium non levis impendebat caries, & fauces semper aliqua flamma sollicitabat*: “ a deep caries also attacked the bone
“ of his nose, and some burning heat troubled his
“ jaws.” *Botallus* attended this man and his brother; but the other who had been infected by drinking out of the cup, suffered no evil in any part of his body for the first two months after; *excepta labii inferiora ora, quæ a demisso infecto cratere paulo post pruritu quodam levi, mox ulcere, coepit efflorescere, nulla tamen de hoc morbo suspitione suscepta*: “ except in
“ his lower lip, where the infected cup had touched
“ its inside; a little after, it began to itch a little,
“ and presently an ulcer began to work off the
“ skin, yet he never suspected to have received this
“ disorder.” But, as it will hereafter be manifested, that part of the body to which the venereal virus is applied, is wont to be affected first, all the rest of the body, over which the distemper entirely spreads itself from an ulcer bred there, and then deposits itself in many places again.

By the genital fluid.] This manner of communicating this distemper is, of all others, the most frequent

quent and certain; which nobody has ever doubted when the distemper was known.

By exhalation.] It is justly doubted, if these humours which exhale from all parts of the superficies of an infected man's body, can propagate this evil at a distance, without any contact. I have never known a sound man to have been infected by any experiment of this kind; then as this has not happened these two hundred and seventy years, that this distemper has been on foot, it is not very likely that it can be possible.

Besides, this venereal contagion seems (as will be hereafter said) to be entangled with mucose thick humours: hence it is not so moveable after being thus united with these, as if it had been alone. But it is certain, that whilst by mercury and a decoction of guaiacum the humours are freed, the venereal virus is dispatched from these bonds by which it so intricately adhered, and is exhaled from the body, and so dispersed through the ambient atmosphere, so that whilst the sick were accustomed to be kept in a warm air, the most part of the faculty dreaded some evil from thence, nor stayed long with such patients. But I have on purpose enquired whether it ever happened that those who attend these sick in hospitals, where many more sick lie in the ward, have ever been infected by them, whilst they daily continue for hours together in such an air. But I have never known that happen.

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AND it usually manifests itself first in that part by which it is contracted.

It for the most part, or at least oftener appears from what has been before said, that the effect of

this contagion manifests itself in that part of the body to which it is applied; for when this distemper is contracted by suckling, it manifests itself about the nipples of the breast; that is, if the infant has infected the nurse: and on the contrary, venereal ulcers will breed on the lips, tongue, jaws, and other internal parts of the mouth of the infant, if the nurse infects it. That man mentioned in the precedent section, who was infected by drinking out of the same cup with another man, first contracted the disease in the inside of his lower lip, and the first mark of the disease appeared there. It is well known, that as often as boils are bred by impure venery in the genital parts, they degenerate into little ulcers in a short time; the disorder then follows, attended with all its train, if not diligently watched; but whether the virus of the disease cannot be received immediately by the imbibing veins of the parts to which it is applied, and so mixed with the circulating humours as to infect them, convert a part of them into its own nature, and afterwards be deposited in various parts of the body; or whether it is always required that the place through which the virus enters, should first be affected with it, so as to be enflamed, corroded, ulcerated, and so as almost to become a poisoned fomes, in which as if it were lurking in a nest, it converts the humours to its own nature, part of which being absorbed by the veins, then defiles the whole mass of humours by such a contagion, is a doubt. I have judged that this necessity cannot universally appear; for on the contrary, it is very probable, that the venereal virus being made active by violent venery, may be communicated to the body without any previous sensible hurt to the genital parts by which the disorder is contracted.

And we see this confirmed by the best authors who wrote of the *Lues Venerea*; so *Fracastorius* * informs

* *Aphrodisiac*. p. 199.

informs us, that this disorder manifests itself not immediately, but will sometimes lurk for a month, sometimes for two, and also very often during four; yet it is attended with some certain signs of an invading disease, heaviness, lassitude, and paleness; *Tandem, quod in majori parte aderat, ulcuscula quædam circa pudenda oriebantur.* “ in fine, for the “ most part some little ulcers are bred about the “ private parts:” where it is to be remarked, that he mentioned not these little ulcers to have been bred in all these patients, but only in the greater part of them; besides, he does not assert these little ulcers to be immediately bred in the pudenda, from the venereal virus; or whether they succeeded it. At least, these little ulcers which followed the contraction of the contagion, are not objected in the first place in the enumeration of its symptoms.

For in either case, those blisters which break forth through the skins of these miserable people, grow into very large lumps, which in a few days change to the worst and forest of ulcers: but this happens not by an application of the disease to that part in which it is found, but is imbibed by the blood in which it lay concealed; and is deposited in various parts of the body: certainly in those at least who had no ulcers in the pudenda.

Some matters similar to these, are read in *Bernard Tomitanus*. † He informs us, that the manifest signs of the Lues Venerea will not appear for two, three, or four months. *Nam ille (morbus) videbatur delitescere, & de futuris aliorum calamitatibus & suppliciis meditari. Signa autem latentis mali recenset hæc: corporis inertia, segnities præter laborem, gravitas membrorum, lassitudines spontaneæ, lentor & tarditas actionum, somnolentia fere assidua, macies corporis, virium sublatio, perturbatio animi, moeror, diffidentia, metus, pallor faciei, sub oculis nigror, vultus, novitas, manuum & plantarum calor, & alia plurima.* “ For this “ disease

“ disease seems to lie hid and shew itself also, as
 “ if meditating future calamities and chastise-
 “ ments. But he recites the signs of this lurk-
 “ ing evil to be an inactivity of body, a weariness
 “ beyond what labour would occasion, gravity of
 “ the members, spontaneous lassitude, a slowness
 “ of action, almost constant sleepiness, a leanness
 “ of body, a decay of strength, a perturbation of
 “ mind, sorrow, diffidence, fear, paleness of the
 “ face, blackning under the eyes, change of coun-
 “ tenance, heat of the soles of the feet and palms
 “ of the hands, and many more.” He after adds,
 that in many more a caries hath been seen to take
 root, which bore corroding ulcers, &c. from whence
 it may be again concluded, that some have at least
 received the venereal virus, though no evil appears
 in the pudenda.

This is confirmed by a case from *Dan. Turner*.*
 A man who for a certain time led a military life,
 freely confessed to have lived not very chaste du-
 ring that time; having obtained his discharge, he
 married a woman who was chaste, sound, and mo-
 dest, and had many children by her; they lived
 together very chastely, and no sign of a gonorrhea
 or any other evil had ever attacked him. Though
 in his state of celibacy he had connections with
 other women; yet, once after coition a light ex-
 coriation was perceived by him on the glans of the
 penis, which spontaneously, or by rubbing a little
 pomatum or candle grease was immediately cured;
 yet this is known to be a chief diagnostic sign of ve-
 nereal ulcers, that they obstinately resist the com-
 mon methods of cure: from whence it appears
 that nothing of the venereal had adhered to the ge-
 nital parts.

Yet this man some years afterwards laboured
 under the quinsy, which was cured by letting
 blood, purging, and blistering: but as the same
 evil

* *Siphylis histor.* xvi. p. 297, & seq.

evil re-assumed its fury, he consulted doctor Turner about it: the doctor found the parotids enflamed, and one of them ulcerated, with a hole in the palate, which admitted the broader end of a probe with a rent, and by which the diseased man could find the smoak pour sometimes through his nose, when he smoak'd tobacco. The probe touched no bone, when thrust into the hole, because a part of the bone which formed the roof or palate, it is plain had been eat away; but the flesh around the hole was fungous. The doctor applied a fumigation of cinnabar to him, which excited a salivation, and carried away the disorder; but the hole in the palate of the mouth still remained wide enough to contain the end of a finger. He lived seven years in sound health after the cure, and afterwards, being struck with a malignant fever, died.

These and many other cases which I have seen, oblige me not to state the learned Astruc's assertion as a general axiom of practice. *Virus nunquam admitti, nisi ea pars, qua admittitur, primum affecta fuerit.** Monet sequentia: De Lue Venerea, quoties morbi locales praeluserint, ex levioribus quidem signis judicandum est: si vero nulli praecefferint, neganti opinioni adhaerescendum, vel ad summum, quod reipsa eodem recidit, judicium cautè cebibendum, dum signa pathognomonica plura, urgentia, certo certiora, rem in apertissima luce collocent. Proinde facile condono, ut de facti veritate ulterius inquiratur. Neque enim obfuit unquam, profuit vero non semel, de iis, quæ evidentissima videbantur, questionem movisse. “ Whenever the virus “ is received, that part by which it is admitted, “ is always first affected; but I entirely agree with “ that celebrated man who directs us in the following manner. Concerning the Lues Venerea as “ often as local disorders preceded a certain one, “ it is to be judged by lighter signals; but if none “ had

* De morb. vener. lib. II. cap. iii. p. 94, 95.

“ had preceded it, the negative opinion is to be
 “ adhered to ; or we must at least carefully with-
 “ hold our judgment, till many and irresistible pa-
 “ thognomonic signs place it in the clearest light.
 “ Therefore I easily forgive a closer enquiry into
 “ the truth of the fact, when made ; for it never
 “ was of disservice, but rather of great service more
 “ than once, to call these things in question, which
 “ seemed most evident.”

Nor do these circumstances which a celebrated author * relates of other poisons, seem to prove much. Whilst the small pox is applied to the little wounds made in the skin, these places are generally inflamed and ulcerated by it, until the infection begins to operate. This is true ; but when it spontaneously comes, without the art of incision or inoculation used to a man, who can determine the place to which the contagion at first adhered, before the whole body is over-run with it ? Whilst the hydrophobia approaches, observation teaches us, that the wounds made by the bite of a mad dog become inflamed, and that the scars of those wounds which have been already healed, will then burst open again ; but it is as certain, that the saliva of a mad dog has produced that cruel evil without any previous wound ; as appeared in the chapter of canine madness.

The venereal virus therefore, when not yet entangled with tough humours, or else when freed from them, is so very minute, and even imperceptible by the senses, that it can find its way into the mass of circulating humours, and be carried with them through every part of the body.

It is fully as active after the lurking in the blood, and has the same effect as if externally applied ; from whence it may happen, that whosoever hath this venereal contagion in his body may have no sign of it externally ; yet that contagion may afterwards

* De morb. vener. lib. ii. cap. 5. p. 94, 95.

terwards be deposited in certain parts of the body, with a train of humours which it has assimilated to itself, and produce evil effects : but it sometimes happens, that the virus absorbed by the venereal ulcer of the gland, though not large, may be deposited in various parts of the body, and then enflame and ulcerate them. I have sometimes seen venereal ulcers on the inside of the mouth, in a few days after the infection, though it may be that such little ulcer solely indicated a venereal contagion to have been received from impure venery ; nor can it be always ascribed to lascivious kisses, since even the whole skin was at the same time spotted with blotches, or venereal pimples, or the evil was deposited in different parts of the body from its first *fomes*. If therefore, the virus absorbed from a small venereal ulcer can infect the whole body, cannot the same happen when an imprudent man is prompted to criminal connection with a distempered woman ? so that the venereal poison may be mixed with the humours, though no injury appear on any external part of the body ; though no gonorrhea nor venereal ulcer precede it, and consequently merely from the contagion absorbed.

The faculty have justly considered, whether the actual presence of the venereal virus in the body, can be discovered by any signs before it is deposited in any certain place of the body, and manifests itself by some sensible effect.

If we attentively consider what are read of the *Brunnus Gallicus*, of which mention has been made in the preceding section, the health of the infected will appear to have been impaired by that distemper* ; for it is said that the signs of its received fury do not immediately break forth, but will sometimes remain dormant for some months. *Interim infueta quadam ignavia, seu torpore, gravati, pigri, segnes, inertes ad consueta munia obeunda, animo quoque abjecto,*

* Schenck. observat. med. rarior. lib. VI. p. 816, et seq.

abjecto, tristes vultu, cum nec mens, neque manus & pedes, officium facerent, veluti umbræ, non homines, passim oberrantes conspiciebantur. Nativus faciei color in pallidum, vigor ipse oculorum in torvum, circulo fusco, sicut mulieribus menstruatis, deformem, subito, immutatus: frons exporrectior in caperatam & nubilam degeneraverat. “ In the mean time they are
 “ attended with unaccustomed heaviness, sloth, in-
 “ activity of body, dejection of mind, a sorrowful
 “ countenance, a dulness of the eyes, encircled with
 “ black like women at their periodical times; pale-
 “ ness of face already deformed, the mind, hands,
 “ and feet, still refusing their offices, or only at-
 “ tempting to perform them; like shadows rather
 “ than men, as they but appear to wander about.
 “ The forehead more stretched out degenerates into
 “ angry frowns and horny wrinkles.” If these signs be compared with those others, I have before noted from *Bernardus Tomitanus*, they will appear alike, and to be those which each author used in describing the Lues Venerea, whilst it lay hid in its seed. But Tomitanus, in the year 1576,* died of the plague in Padua, at the age of seventy years, consequently could have heard nothing of the *Brunnus Gallicus*; and it is by no means credible, that *Jordanus Brunus*, who saw the distemper with his own eyes, described the symptoms of the concealed infection from Tomitanus.

But it is first to be observed, that after the first steps of this disorder, it betrays itself by manifest signs; for the venereal virus was deposited in some certain places of the body, and not yet separated from the humours; for example, *Vestigia cucurbitularum turgescientia extemplo ardor invasit immensus et immedicabilis, quem fædi abscessus, & ulcera exceperere putrida, sanie taboque fluentia, &c.* “ Violent and
 “ obstinate heat invaded the swelling traces of the
 “ cupping-glasses, which afterward broke forth into
 “ foetid

* Astruc. de morb. vener. tom. II. p. 766.

“ foetid boils and putrid ulcers flowing with a filthy
 “ corruption,” &c. Perhaps the instrument, by
 which the scarifications were made, was infected, and
 left the virus in those places it cut; which might
 have remained for some time there, and afterwards
 become active so as to produce the worst of ulcers.
 But then, these foetid ulcers would have broke out
 in all the scarified places: but the history of this
 distemper teaches us different; for there * we read
 as follows: *Admirabile dignum initio, quod e tot af-*
fixis cucurbitis, cum alii decem plus minus, tres quoque
tantum nonnulli, opponi jussissent, una duntaxat, aut
ad summum duæ (socrui Laurentia sartoris e quindecim
tres) ex iis omnibus in scdam transverant vomit-
cam: “ In the beginning it is worthy of admira-
 “ tion, that from so many cupping-glasses applied,
 “ that some ordered ten at least, others less, or three
 “ only to be applied, that one or two only at the
 “ most, (out of fifteen, put on the daughter-in-law
 “ of Laurence the taylor, three only) should turn
 “ into foetid running sores.” From whence it ap-
 pears, that the virus of the distemper did not ad-
 here fixed to the scarified places, but that the health
 was disturbed, and the virus was mixed with the hu-
 mours in a wonderful manner; and afterwards de-
 posited in those places, which it ravaged by a foetid
 ulcer; *ita ut caro, cucurbitæ ambitu circumsepta, cor-*
rosa, putrescens, tetrum, ut e Telephiis a Phagæde-
nicis ulceribus, fætorem infexerit; “ so that the flesh,
 “ within the circuit of the cupping-glass, was every
 “ where seized, corroded, and putrified with corrup-
 “ tion, so as to discharge a stench of cankered sores.”

In the course of this work, when we come to
 speak of the venereal buboe, it will evidently ap-
 pear, that the Lues Venerea for the most part ma-
 nifests itself in that part by which it is contracted,
 but yet not always.

SECT.

* Schenck. in loco modo citato.

S E C T. MCCCCXLIII.

NO R hath it ever taken its rise from any man or woman not infected with the same disease.

It fully appears, from what hath been said, that the Lues is the most contagious distemper, and that it is most extensively spread by contagion, admits of no manner of doubt; but before in Sect. 1382, and 1409, where treating of contagion in general it was shown, that contagion necessarily pre-supposes two men, one from whom the contagion passes, and another who receives the same in himself, and grows ill by the same disorder as the first.

But if we consider this matter, we cannot deny that the first of mankind who laboured under this contagious disorder, had not contracted it without any communication of a contagion from another man; for it implies a manifest contradiction, that he who first laboured under any disease, should have received infection from another man; as therefore the first who laboured under this disease was infected without any contagion, why should not the second, third, &c. also? From such-like causes which produced the distemper in the first, many may be affected in the same manner.

But it was proved in the paragraphs just now cited, that diseases may spring from manifest causes in the human body, which diseases are the effects of those causes, and yet the body of the sick man may be changed by those same diseases, so as that he may infect other men who had not been exposed to these manifest causes by which the diseases were produced in the first sick man.

But where the contagion once takes birth, there is no need that the same cause which produced the disorder

disorder in the first sick man, should always remain; but that the same disease may go on to exercise its force on others, by communicating a contagion, which, whoever can avoid, will remain free from the disease, as was proved by many more observations in those places already cited.

From hence it is understood, why certain disorders are derived from certain regions where they are endemial, and only brought by contagion into other regions; which contagion being once overcome, the disease takes no second birth, unless the same concurrence of causes happens which produced the disease in the first man who laboured under it; yet this very rarely comes to pass, and in certain regions never.

But I have known no observation by which it can be demonstrated, that the Lues Venerea hath taken birth in Europe without a contagion.

Nevertheless, as the first who was attacked with the Lues, had contracted it without a contagion, he ought to have bred it from one or more causes concurring with this filthy disease. The faculty were very assiduous in the search of such causes, whilst they carefully explored this new disorder; and, as is customary in such cases, they divided into different opinions.

It was before said, that the Lues Venerea was ascribed, in its first origin, to some certain aspects of the stars, inundations, and various other causes; but then it was also proved, that such causes had often existed in Europe before this distemper was known there, and also afterwards; yet it was never observed that the distemper was thereby rendered more general or virulent.

Many * have believed that the leprosy had degenerated into the Lues Venerea; and its origin was attributed to a famous harlot, whose favours were obtained for fifty pieces of gold, by a soldier of some

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military

* Aphrodisiac. p. 1. & alibi sæpius.

military order; which harlot had the leprosy. Then as this youth, and many more, often frequented this woman's company, more than forty of them were in a few days infected, and the evil was extensively spread among others*.

But as the celebrated *Astruc* excellently remarks†, that *Felix Platerus*, during forty-three years successively, had inspected into the nature of the leprosy, and having many occasions for employing himself in such observations, well knew that disease: but he asserts the leprosy to be a disease quite different from the Lues Venerea, whose signs and symptoms he very diligently searched into, because the knowledge of that disease was then very necessary, whilst the Lues was believed to be spread to some distance by contagion; and therefore the chief magistrate ordered the sound to be separated from the diseased, and appointed particular hospitals for the poor, where they might be cured.

But as this disorder is chiefly propagated by coition, many have believed that this scourge of sensuality had principally taken its origin from unbridled lust; at least this cause cannot properly be assigned for its origin in Europe, neither would it have lain hid there for so many ages, if it had its origin from thence. The manners of the ancients were very depraved, as history informs us; yet we find no trace of the Lues Venerea in antient history, not even in the poets, who severely lashed mens immorality, without sparing the vices of the age. In what lively colours would Juvenal, Horace, Martial, &c. describe the miserable victims to this disease, if they saw these mutilated sons of venery, some with their noses cut off or torn, or boils flowing with filthy corruption? From whence it may be concluded, that the coincidence of those causes, from which the disorder

* Aphrodisiac. p. 903.
som. II. p. 878.

† De morb. vener.

temper might have had its birth without any preceding contagion, was not yet observed in Europe.

But in the torrid regions, where women are observed to have their courses more acrid, where no difficulty attends the desire of any ravisher, where the men furiously rush on with loose reins to venery, it does not seem entirely improbable that the filthy disease had its origin there. It at least seems a probable conjecture of Astruc *, which he thus proposes: *Cum ergo in omnibus terræ locis, ubi Lues Venerea antiquitus endemia fuisse videtur, eundem aëris fervorem cum pari incolarum impudicitia conjunctum fuisse, manifestum sit, haud inanis inde locus est colligendi, morbum natura eundem, quo regiones longissime diffusæ, & inter quas nulla fuit commercii communio, simili modo infestabantur, a simili causarum earundem concursu, in quo tantum convenirent, generatum olim fuisse, & generari etiamnum, si indigenæ iisdem moribus vivant.*

“ Therefore, as in all places of the earth where the
 “ Lues Venerea seems formerly to have been ende-
 “ mial, it is well known that a fervent temperature
 “ of the air had been joined to an equal impudicity
 “ of the inhabitants, there seems reason to conclude,
 “ that a distemper which had prevailed with the same
 “ symptoms, in regions distant from one another,
 “ and between whom no commerce had ever been
 “ carried on, was generated in all by the concurrence
 “ of the same causes, and may be produced again,
 “ if the inhabitants live in the same immoral man-
 “ ner.”

Many others would have the Lues Venerea to have had its birth from a mixture of nations and assemblage of their various diseases, which all met together at the camps before Naples. But the celebrated Morgagni † makes the following remark: *Quasi vero iis in castris major fuisset nationum commistio, quam Romæ quondam, cum unum idemque scortum pateret Cættis, Germanis,*

D 2

Germanis,

* Lib. I. cap. xii. p. 93.

† De sedibus et causis morborum per anat. indagatis, tom. II. p. 370.

*Germanis, Dacis, Cilicibus, Cappadocibus, Indis, Judæis, &c. † una tum Romæ deërat natio Americana, quacum qui commercium per se, aut per alios saltem, habuissent, in castris illis non deërant; ut unde nova non morborum collectio, sed Lues, in Europam venerit, intelligatur: “ As if in that camp a greater mixture of
 “ nations happened than formerly at Rome, where
 “ one and the same prostitute was exposed to the
 “ Germans, Transilvanians, Cappadocians, Indians,
 “ Jews, &c. the American nation only was then
 “ wanting at Rome; but in that camp there was no
 “ want of persons who had commerce with all other
 “ nations, at least intermediately, to shew from
 “ whence this Lues, not assemblage of diseases, had
 “ its origin.”*

But though it cannot be denied that the Americans often used bad victuals, yet the origin of the Lues Venerea cannot from thence be deduced, as the celebrated Astruc || demonstrates by more proofs than one, at least in besieged cities in Europe; or when, for other causes, a scarcity of provisions distresses the miserable inhabitants, and the worst of disorders have been bred; but the Lues Venerea never was of their number. From whence it may be very justly concluded, that the Lues Venerea did not spontaneously take birth in Europe, but was propagated by contagion; § which is chiefly communicated by coition, by kissing, or at the breasts. For though that celebrated author, Antonius Musa Bravolus denies not that it may be communicated by other means, such as sleeping in the same bed with one infected, drinking out of the same vessel, &c. with him, yet he observes, *addendum esse, ad hoc usque tempus non esse visum, neque cognitum, quod quispiam nisi per coitum, vel osculum, vel mamma, hunc morbum receperit; “ that even unto this day it has not
 “ been*

† Martial, lib. VII. epig. 29.
 tom. I. p. 90. & seq.

|| Lib. I. cap. xii.
 § Aphrodisiac. p. 674.

Sect. 1444. The VENEREAL DISEASE. 37

“ been known that any person had received this disease, unless by kissing, sucking at the breast, or by coition.”

S E C T. MCCCCXLIV.

THE part infected (Sect. 1442) is at divers times truly known, chiefly by a diversity of contagious matter issuing from the infected place, by a degree of heat, by a change of constitution, by itching, heat, a soft inflammation, by a rough, scaly, whitish, mucose, corroding pustule, not to be cured by common medicines.

As the Lues Venerea is so grievous an evil, and as it is rendered worse by delay, every physician ought therefore to apply his labours, that it may be known at its first appearance. Sect. 1442 informed us, that this distemper is wont to manifest itself first in that part by which it was contracted; but it was also said, that sometimes the venereal virus is mixed with the mass of humours, without leaving a trace in that part by which it was contracted; but the contagion, if not by good fortune carried away from the body, as sometimes seems to be the case, it changes a part of those humours with which it flowed through the vessel into its own nature; and this evil, so borne in a man sound before, will be deposited in various parts of his body, and begin to adhere there, and so produce various evils.

In this section we must treat about these morbid changes which appear in various parts of the body, whilst the contagion adheres to them, whether by immediate contact of an infected person, or whether by a deposition of contagious matter before mixed with the humours, and now removed to those parts of the body.

According to the variety of the places infected, a diversity is manifestly observed; for as most parts of the body are covered with a rough skin, but some want these; so it has been observed, that whilst midwives feel the genital parts moistened by the venereal corruption a long while, they must be affected by the disorder, where a contagion of a most efficacious malignity must penetrate the hard skin, so as to infect the body, or raise an ulcer in that skin very hard to be cured; as the same is often observed in the back of the penis, whilst the skin, by impure coition, is corroded by a foetid ulcer: but where the corruption breeds in those parts of the body which have no skin, and *cæteris paribus*, the virus more easily penetrates, yet not always so, that this dangerous evil follows; so it is well known, that the cutis does not cover the nostrils and lips, but the epidermis only, as it does likewise the whole internal bone. So it is with regard to the breasts of a woman, and the interior part of her genitals, in the glans of the penis, and in the internal superficies of the præpuce. These seem to be more easily infected also by a lighter contagion, whilst the parts covered with skin are better defended. So it is generally observed that the Jews are less subject to infection, if in the same circumstances; for as the fore-skin is cut off from them, the naked glans of the penis is continually rubbed by their cloaths, and thereby rendered more callous; likewise that between the fore-skin and the glans, nothing can be collected to prevent the activity of the virus, and therefore it is much worse and more acrid. For this reason the frænum of the præpuce, in those who have it short, is so frequently corroded, viz. by the lodging of the virus so readily upon it.

[Of contagious matter.] The whole history of this disease teaches, that divers degrees of the malignity may be observed in the contagious matter of this distemper. It will hereafter appear, that there are venereal

venereal gonorrheas very mild as yet, from which the matter, changed from white to straw colour, distils from the penis, and attacks the urethra with a light painful heat. From some others this matter comes forth of a deep yellow, and from others greenish, corroding and affecting the urethra with intolerable pain, while the urine is discharged; the vessels corroded, and the urine is bloody. In the worst of gonorrheas however, if proper medicines be applied, we see the worst and most acrid contagious matter gradually amend, until, with remarkable decrease of all the symptoms, it comes away whitish, or a little yellowish, and in a small quantity, and at length ceases altogether.

But it is easily understood, that a woman must be infected with the same virulence as the man was with whom she was connected. This observation holds, if the distemper be confirmed; and not any one part, but the whole body be infected. What the celebrated Astruc has written, concerning the variety of the contagion, deserves to be read.*

By a degree of exciting heat.] As it seems that this distemper was formerly bred in the hottest countries without any contagion, at least in the first man who laboured under it, as was said in the precedent section, it seems very possible that the activity of the venereal virus might have been increased by a greater degree of heat; from whence it has been observed, that this disease hath sometimes made such havock in the burning regions of Africa. It is also observed, that the bodies of infants and boys nourish this foetid disease more readily: for by engaging in venery, their bodies are in general hotter than those of the adult. Whilst filthy prostitutes are incited to venery by handsome young men, it is to be feared, if they are infected, that the contagion will be more violent.

It is constantly observed, that those of the infected who indulge themselves with hot wines, aromatic spices, and spirituous liquors, feel an increase of all the evils of the disease. Physicians are often grieved that such patients should become disobedient towards the finishing their cure by mercury or decoctions, and so despise those salutary precepts of art, as to give themselves up to excess of gluttony and drinking, until a return of the disease again shews itself, arising from some minute virulent particle which had not yet been expelled from the body, so that improper or bad diet agitates it again in such a manner that the evil remains, and they and the physicians hopes scandalously fail of cure.

It is true that the sick are kept in a warm air, whilst the cure is attempted by salivation or decoction; but the intention then is, that the humours, loosened by the force of those remedies, may be driven out of the body by salivation or sweating, with the venereal virus that adheres to them. So far it conduces to a cure, when the sick live in a warm climate, during the expulsion of the disease from the body, then their strength is sustained by soft diet, and what had been lost is again restored to them.

Rendering the strength of the contagion more active by heat, is a very different thing from expelling that evil by a heat prudently increased, the humours being first dissolved. From hence likewise, in hot regions, the cure of the venereal disease will be sooner and more happily effected, if proper methods are applied.

From a diversity of constitution or air.] It follows, from what has been before said, that men of a hot constitution are sooner and more vehemently affected by the contagion of this distemper; and that in cold and phlegmatic constitutions, and fat corpulent men, this distemper is entangled by slow and viscid humours, and is more hard to be extricated from them, as will be treated of hereafter.

By itching, heat, a gentle inflammation, a little blister, &c.] What may appear changed in that part by which the contagion of the Lues Venerea was contracted, is now to be strictly enquired into. These things were all accurately described, * where that part by which a contagion first enters lies open to the eyes. *Ibi enim macula rubella observatur, quæ variolæ nascituræ, aut morbilli, stigma, vel morsum pulicis, ferme refert. In hac æger pruritus levem, calorem molestum, vix dolorem, sentit. Elevatur papula hæc, squamulamque cuticulæ attollens bullulam elevat, quæ, si latice tenui, pellucido, distenditur, rupta dein facile sanari, absque ulteriori malo, solet :* “ For
 “ there some red spots are observed, which are much
 “ like a nascent small-pox or measles, pimples or
 “ flea-bites. Here the patient feels a light itching,
 “ and some troublesome heat, scarcely to be called a
 “ pain : a blister here rises ; lifting up a knob raises
 “ also some scales on the skin, which if covered by a
 “ thin pellucid skin, and then breaking, it will be
 “ easily cured, without any farther evil.”

For the skin being broken, the contagious particle, together with a moisture or water to which it adhered, flows out ; nor does it leave any trace of evil ; as it is but thin, it fails of that tenacity by which the disorder might have been entangled and fixed in the place.

Quoties vero macula modo descripta in tuberculum assurgit repletum materia subalbida flavescente, spissa instar cremoris lactis recentis, vix cohærente, sed instar ejusdem cremoris defluente quasi ; quando, intercepta digitis, horum a se invicem abductione lenta remittitur ; quæ exsiccata, ex viridi flavescens, indurescit cum lintheis, quibus inhæret ; tum semper sinistri magis ominis erit malum, suspectum prudenti medico, neque adeo facile sanabile. Cancrum seu idiotismo chirurgi jam vocare solent. † “ But as often as these spots now described
 “ rise into a swelling, filled with matter turning
 “ from

* In Praefatione Aphrodisiaci.

† Ibid.

“ from white to yellow, about the thickness of new
 “ cream, no way viscous; for being taken between
 “ the fingers, it falls into broken drops, when
 “ gently pressed and separated by them; thin, turn-
 “ ing from yellow to green, as it dries and hardens
 “ upon the linen it adheres to, it always gives a bad
 “ omen of this distemper, which is suspected by a
 “ prudent physician to be not so easily curable.
 “ Surgeons have called it a chancre, because it
 “ obeys not the common remedies,” feeds gradually
 upon neighbouring places, and if it is covered with
 a crust, and seems to be almost dry, many more
 such take birth again, with every property of the
 former.

The first trace of the Lues Venerea in that part of
 the body it first infected, was wont to appear in such
 form whilst the contagion adhered to that place. For
 if that contagion, by the great heat of the air or the
 constitution, had become very active and moveable
 by fervent venery, it sometimes remains not fixed in
 the external integuments of the body; but being ab-
 sorbed by the imbibing veins, it is mixed with the
 humours, and converts a part of them into its own
 nature. This morbid matter is afterwards carried
 to the exterior habit of the body, and produces simi-
 lar pustules, as hath been before said, in Sect. 1442.

And it is sometimes observed, for I myself have
 seen the venereal virus already received in the blood,
 and afterwards deposited in the skin, produce spots
 of a dark red, hardly raised, which become rough
 and scaly, and after many successive scales, brake
 and change to venereal ulcers; which daily discharged
 a large quantity of corruption, turning from a yel-
 low colour to a green.

From whence it appears that the danger is also the
 greater, if the venereal virus immediately entered the
 blood, without affecting that part which it first
 touched; for though the morbid matter be after-
 wards again separated from the blood, and deposited

in

in other places, still an augmentation of the morbid matter appears; and it is not in the power of the physician to direct such a removal to those places where it may be deposited with less danger, and more easily cured. For some sad cases teach us, that not only the exterior, but interior parts of the body have also been most foully infected, as the following section will inform us.

Astruc * hath not undeservedly taught, *Statuit Virus Venereum partibus, quascumque afficit, ruborem, calorem, tensionem, dolorem, uno verbo phlogosim, vel inflammationem adferre*; “that in those parts affected
“with the venereal virus, redness, heat, extension,
“pain, and in a word, a fiery inflammation is produced.” Yet this inflammation is slow, and runs with an easy pace to its period; for it turns not into an abscess so very suddenly after as in other inflammatory diseases, nor does the departure of the inflammation follow; but an acrimony still remains, which occupies the parts of the body, nay even the bones are not excepted, which it consumes and destroys with a slow putrefaction.

But though these signs, which occur in a place occupied by the Lues Venerea were exactly described, yet we must be very careful in proceeding according to these diagnostics; for though the physician might have a just suspicion of this foetid disease, prudence requires that we denounce it not rashly, unless the patient acknowledges to have incurred the danger of catching the distemper. Many are accustomed to deny that very obstinately, and heap contumely and ill treatment upon the physician who daringly suspected any such matter. The reputation of the patient, together with the peace of his family, will undoubtedly require to be always considered.

* Lib. II. cap. ii. p. 89. & seq.

S E C T. MCCCCXLV.

FROM hence it first, and for the most part, infects its external neighbouring parts, in its growth, with ulcerous pustules of a similar nature; from whence the internal parts, the lips, gums, palate, tongue, jaws, nose, brain, liver, lungs, melt, womb, &c. become also infected.

The venereal virus hath this in common with other contagious diseases, that if it had been received even in the most sound human body, it can change the sound humours into its own nature, and so be increased in quantity. It is manifest from what has been said about the small-pox, that the least particle of the contagion entering into the sound body, and mixed with the humours, so changes them, that in eight days time the whole body is overspread with the pock bursting with matter, the least drop of which will communicate the same disorder to a sound person. Hence it appears how much the contagion of this disorder can increase and be multiplied. In a canine madness, the itch, plague, &c. the same observation holds. Therefore, as the Lues Venerea is propagated by contagion, *dimanat ab ægris in sanos seminum, sive miasma quoddam morbificum, quod, pauca quidem, imo paucissima, quantitate, & inconspicuis viis; sano corpore insinuatum, dein copia, viribus, efficacia, simul invalescens, totam humorum massam tardius citiusque inficere valeat, atque pessundare*: “ it spreads its seed, or a certain morbidic “ virus, from the sick to the sound: though even “ in the smallest quantity, and by the most occult “ means it may be insinuated into the sound body, “ it afterwards infects the whole mass of humours “ by its force, its quantity and efficacy, and will, “ sooner

“ sooner or later, master it.” * Therefore as the contagious particle may be very minute in the Lues Venerea, and equally as in other like disorders it may be moveable enough in its nature, it may seem probable that it can be spread through the air by light causes, and propagated at a distance, as is certainly known concerning the contagion of the small-pox. *Venereum virus non constat partibus tenuibus, levibus, volatilibus, penetrabilibus, quæ in auras spargi possint, quæ in distans evolent, quæ strictissimos poros celerime pervadant, sed crassis, ponderosis, fixis, quæ communicari non possint, nisi calore exaltentur, nisi partes objectæ raræ sint & permeabiles, nisi contactus intercedat immediatus et satis diuturnus: †* “ But the venereal virus consists not of slender, light, volatile, penetrable parts, which cannot be spread in the air, which fly to a distance, or lightly enter the narrowest pores; for they are thick, heavy, and so fixed, that they cannot be communicated except that they are raised by heat, and that the parts objected be rare and passible, and unless the contact precede and be of some continuance.” † Then the venereal distemper is accustomed to creep on with a slow pace, but yet not always. For sometimes this infection, bred from a local evil, will presently manifest and disperse itself, in a short interval of time, all over the body. *Gasperus Torrello*, ‡ who wrote about the end of the fifteenth century, in a few years after this distemper was known in Europe, relates the following case of a young man of twenty-four years of age, *qui rem habuit cum muliere habente pudentagram; quare eodem die ipse fuit eodem morbo infectus; quæ infectio incepit apparere in virga; ut solet ad plurimum aliis evenire: nam sequenti die apparuit ulcus in virga, cum quadam duritie longa, tendente versus inguina, ad modum radii, cum sorditie, & virulentia. Post sex dies, ulcere semicurato, arreptus fuit ab intensissimis*

* Astruc, ibidem.

† Ibidem, p. 90.

‡ Aphrodisiac. p. 545.

*siſſimis doloribus capitis, colli, ſpatularum brachiorum, tibi-
arum, et coſtarum, et præſertim in eorum muſculis, cum
maximis vigiliis, a quibus moleſtabatur non niſi in nocte poſt
primum ſomnum. Elapſis poſtea decem diebus, apparuerunt
multæ puſtulæ, in capite, facie et collo, &c.* “ who
“ had connection with an infected woman; where-
“ fore he was that very day infected with the ſame
“ diſeaſe; which infection began to appear in his
“ yard, as it uſually happens to others. The fol-
“ lowing day an ulcer appeared on his penis, with
“ a certain long hardneſs, large and tending towards
“ the groin, which burſt forth altogether with a
“ filthy foetid matter. In ſix days after, he being
“ half cured of that ulcer, he felt very grievous
“ pains in his head, neck; ſhoulders, arms, ſhin-
“ bones, ribs, and eſpecially in the muſcles of
“ thoſe parts; with want of ſleep, but not till after
“ his firſt ſleep. Ten days having elapſed, a num-
“ ber of pimples or blisters appeared on his head,
“ face, and neck, &c.”

That hiſtory proves the venereal diſtemper to have been diſperſed all over the body in a ſhort time, and to have produced very pernicious ſymptoms.

Therefore, as the maſs of this contagion may be very minute, it ought to appear ſoon ſpread over the body, or be received by the veins, ſo as to be mixed with circulating humours, and infect the whole body. But many more obſervations teach us, that the venereal virus can adhere a long while to a certain place, before the whole body is infected; but this can hardly be conceived, unleſs that virus by being wrapped up in very tenacious humours, adheres to the part affected.

This is a reaſon with the celebrated phyſicians ſtated, that this diſtemper, eſcaping all the ſenſes, adhered to ſome more tenacious humours, which ſerved it as a vehicle; for here *Fernelius* * acknowledges, that

* De Luis Vener. curat. cap. xii. p. 223.

that subtilty to be so great, *fere corporis experts sit*; "that it is not only light, but that it may be almost called immaterial." Hence, if it is not joined to some other humours, it cannot act in the human body. *Qui enim possit corpori nostro vim inferre virtus incorporea?* Who or what incorporeal power can affect our bodies?" From whence he adds the following: * *Quaquam enim pituitosa videatur materia, venenamen maleficio perfusa, acrimoniæ particeps est*: "yet the malevolence of the poison is spread through the pituitous matter, which becomes a partaker of its acrimony." So *Fracastorius* † thought the same in writing of this disease.

*Porro homine e toto, quod in ipso sanguine crassum
Et sordens lentore foret, foedissima primum
Corripuit, sese pascens uligine pingui.*

And a little after, ‡ where he treats of the venereal pustules which deform the body:

————— *Pustula summæ
Glandis ad effigiem, & pituita marcida pingui,
Tempore quæ multo non post adaperata dehiscens,
Mucosa multum sanie taboque fluebat.*

Helmont || compares the subtilty of this contagion to scented effluvias, which are generally taken as instances by philosophers to prove the great divisibility of bodies, which almost surmount all imagination. For it is known that *assafoetida*, musk, &c. spread their scents through a large room for a long time, without a sensible decay of their weight. For, he holds this opinion, *est nimirum Lues non quidem morbus constans materia ex qua: sed fermentum duntaxat venenosum, solidis vel liquidis nostri partibus,*
odoris

* De Luis Vener. curat, cap. xii. p. 124.
Aphrodisiac. p. 186. D.

† Siphylis

‡ Ibidem, p. 187. B.

|| Tumulus pestis, p. 847. col. 1.

odoris instar, affixum: “that the Lues is certainly
 “not a disease consisting of a peculiar matter, but
 “a fermented poison fixed to our fluid or solid parts
 “like an odour.”

Whilst the celebrated *Boerhaave* * considered these matters, *celeberimus Boerhaave credidit hoc mali genus semper sedere in illo humore pingui corporis humani, qui naturaliter in bene sanis replet illam partem, quam adiposum panniculum veteres, hodierni cellulofam membranam vocant*: “he believed that this kind of evil was
 “always placed in that fat humour of a human
 “body, which naturally fills up that part in people
 “in health, which the ancients called panniculus
 “adiposus, and to which the moderns have given
 “the name of the cellular membrane.”

For it consists of many small cells, which form a body pierced by many very subtle vessels. All these little cells lie mutually open to one another, and may be wonderfully dilated by very small force; from whence, in the emphysema, being filled with air, they swell terribly; and swell in the dropsy, being filled with water. And on the other hand, in consumptive cases, these little cells will collapse in such a manner, that they will hardly leave a trace behind.

It is to be particularly remarked, that this cellular membrane is every where spread under the skin, and that it not only lies upon all the muscles, but also surrounds and invests them on every side; and by its interposition separates the muscles from one another, that the motion of the muscles may remain free; and the tendons of the muscles are every where surrounded by this cellular membrane, that they may be easily contracted and extended. The same membrane expands itself round the exterior parts of the periosteum, and bones, and junctures above the ligaments, and covers all those parts; and finally insinuates itself into the bowels, by an expansion of the peri-

* In Præfatione Aphrodisiaci.

peritoneum. * But this same coat is distributed through the muscles in such a manner, that it insinuates itself every where amongst those distinct muscular fibres, of which the greater are composed, so as to fold in and cover all the parts; by means of which those muscular parts which compose the greater muscles are enabled to move with facility, and yet with distinct motions. But as that cellular coat reaches unto the periosteum, and the matter of which the marrow is formed is brought by the vessels of the periosteum between the cavities of the bone, and partly carried back by the vessels of the periosteum, it is evident that an easy intercourse is maintained by the effect of this membrane amongst all the remotest parts of the body. †

The celebrated *Boerhaave* hath held it necessary to premise this, that his opinion of the Lues Venerea may be better understood: for he places the chief seat of this distemper in the cellular membrane; whilst this contagious evil enters the pores of the epidermis, and passes through the little vessels of the skin, and works on to the cells of the membrana adiposa; and mixes itself there with the fat, then corrupts the viscous oil by its virulence, and is again withheld and cherished by the viscous nature of that oily matter. Whence the fat collected in that membrane forms a nest and vehicle for the venereal contagion.

This membrane is usually called the membrana adiposa, in those parts of the body where it covers large swelling muscles; for there it contains a great quantity of fat. But where this membrane is thin, as upon the eye-brows and forehead, then it is only called the cellular membrane, and instead of a thick fat, contains in its vessels only a mucous humour, which is likewise proper to entangle and retain the Venereal Lues.

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* In Præfatione Aphrodisiaci.

† Ibidem.

It may be conceived how useful this doctrine is, not only for the understanding the effects of the Lues Venerea, but also for the curing of this filthy disease, as will appear from what follows. The learned *Astruc* * endeavours to overturn this opinion, which seems to him to be *contra notam veneni, seu semenis venerei, indolem, facultatem, invadendi et progrediendi rationem*, “inconsistent with the known manner of this poison’s growth, its power and manner of attack and progress.” He endeavours to establish this opinion with many arguments, nor does it appear useless to consider these briefly.

He first states, that the gonorrhea, shancres, buboes, and warts, are for the most part to be observed as the first symptoms of the distemper, and that none of these lodge in the membrana adiposa. But without disrespect to so great a man, whose memory I venerate, I must remark, that he has not fully read that most excellent preface with which *Boerhaave* adorned a collection of the authors who have wrote of the Lues Venerea, published in the twenty-eighth year of this century at Leyden. I took care that this edition should go forth more immaculate, because I owed all the matter of it to the best of masters, to whom I knew not how to pay sufficient gratitude.

But it is evident, that the celebrated *Astruc* had not attended to that diversity of this membrana adiposa, which is set forth in elegant words in that preface. † *In illis autem locis, ubi muscoli minimi, minusque agentes, membrana hæc adeo paucò pingui instruitur, ubi adiposam negent omnes fere, cellulosa tantum admittat Ruyschius. Ita in capite, palpebris, facie, scroto aiunt abesse; sed falso; adest quippe, at tanto parcius ibi, quam ad nates, quantum elevator palpebræ superioris, vel corrugator frontis, minor est glutæis.* “Bu
“ i

* De Lues Vener. lib. IX. tom. II. p. 1073.

† Cum paginæ nullis notatæ sint numeris, non potest exactè indicari locus.

“ in these places where the muscles are but few and
 “ least active, this membrane is furnished with so
 “ little fat, that most anatomists deny it to be the
 “ *membrana adiposa*. Ruyfchius only admits it to
 “ be the cellular membrane. In like manner some
 “ say, that it is not to be found in the head, eye-lids,
 “ face, or scrotum; but that is false: for it is there,
 “ but more sparingly than upon the buttocks, &c.”

It is the opinion of this author, that the venereal contagion is entangled and fixed first in that fat which fills the cells of the *membrana adiposa*, namely in those places where a solid thick fatness is spread over the muscles; but in other parts, where this fatness is wanting, or scarcely to be found, a mucose humour lies in these cells, which lubricates the parts, and in like manner entangles the virus of the distemper by its viscosity, and retains it in that place; so that being thus retained it assimilates the flowing humours to itself: and as all these little cells are open to one another, and this coat is also extended through the interior and exterior parts of the body, the increased virus may be propagated through the whole body, and may produce very melancholy evils in various places, as it comes to pass in an inveterate Lues, according to the justest observations.

But it is known, that the hollow mucose places in the urethra cast out such a viscid humour, which defends the channel of the urethra from the acrimony of the urine, and is most apt to catch the venereal contagion by its viscosity. From this it is evident, that the gonorrhea does in no manner weaken, but rather establishes Boërhaave's opinion, as it will appear where the gonorrhea is hereafter treated of.

For the same cause the most foetid ulcers so frequently break out in the jaws, roof of the mouth, palate, and in the insides of the nostrils, and around them: for all these places are perpetually moistened by a copious, mucose, viscous humour. The same also is true with regard to buboes; for though it may be

that the virus, by being absorbed by the lymphatic veins, might have come to the glands of the groin, yet those likewise are placed in the membrana cellulosa or adiposa. Besides, anatomy teaches, that the glands are composed of arteries, veins, nerves, together with a certain particular substance, which rules these vessels and their various complications, and preserves their course and variety of combination; so that all this apparatus is surrounded in common with that membranous covering. From hence it is to be observed, that the glands of the groin are not without that cellular membrane in their substance, as is proved concerning these matters in Sect. 374, of inflammation, and in Sect. 1225, of the dropsy; namely, that the cellular membrane is spread all over the body, that almost all the vessels run into such a cavernous substance above mentioned, and constitute a part of the flesh between the skin and bones. Buboes will be treated of hereafter in their place.

Boerhaave * clearly explains what is to be considered in regard to the tumours called porra, and warts; for he afterwards had remarked, that the glans of the penis consists of a spongy body, produced by the urethra turning backward above two spongy bodies of the penis, and adds the following words: *Altera pars, quæ ad glandem constituendam cum corpore spongioso urethræ concurrit, est numerosa congeries papillarum nervosarum sententium, quæ a corona glandis, usque ad urethræ orificium, ordinatis stratis superficiei fabricæ spongiosæ incumbit, atque exteriorem ita glandis ambitum facit, ut extremi hic nervi, voluptatis et doloris instrumenta propria, sub tenerrima glandis membrana extima coerciti, sibi mutuo incumbentes, jaceant: hinc penis glans, si deglubitur hoc extremo involucro, liberis, solutis, assurgentibus, his papillis hirta tota, et villosa apparet. Omnes rursus hæ papillæ tenui membrana cellulosa distinctæ sunt a se mutuo. Quid sit ergo, tenuissimam*

* In Præfatione Aphrodisiaci.

tenuissimam transgressum membranam externam glandis, hanc ipsam exederit, en nudatas papillas has. Sed vah quantus tunc dolor ! Utique intolerabilis : neque inter symptomata venerea vix aliud atrocius excrucians. Si tum cellulosa fabrica tenuis absumitur tabo Venereo, solutæ papillæ excrescunt, faciuntque verucces Venereas, horrendum symptoma ; imprimis horrescens circa coronam glandis ; quia plurimæ ibidem papillæ. Spectavi et exhorruui terribile hoc malum, quod, echini instar, glandem deformans, præputii fere motum omnem impediabat.

“ That other part which concurs with the spongy
 “ body of the urethra to constitute the glans, is a
 “ numerous congeries of nervous papillæ, which
 “ lie along in regular strata from the corona of the
 “ glans to the orifice of the urethra, upon the
 “ spongy superficies, and so forms the exterior sur-
 “ face of the glans ; that here the extreme nerves,
 “ the proper instruments of enjoyment and pain, are
 “ placed under the outmost and tenderest membrane
 “ of the glans. From hence, if the glans of the
 “ penis is peeled or skinned, and this extreme cover
 “ is separated, it will appear all rough and shaggy,
 “ with these little papillæ rising at liberty. Again,
 “ all these papillæ in the slender cellular membrane
 “ are mutually distinguished from one another. If
 “ therefore the evil, passing this slender external
 “ membrane of the glans, should eat into the
 “ glans itself, then these little papillæ are all
 “ changed ; but with what intolerable pain ! for a
 “ more excruciating can hardly be known amongst
 “ all the venereal symptoms. If then the cellular
 “ slender fabric is consumed by the venereal corrup-
 “ tion, these papillæ freely grow up and form vene-
 “ real warts, which is a dreadful symptom, and
 “ chiefly appears about the corona of the glans, be-
 “ cause the most part of the papillæ are in the same
 “ place. I have seen this terrible evil, as if it were
 “ a hedge-hog deforming the glans, which almost
 “ hindered all the motion of the fore-skin.” So that

if I do not mistake, this difficulty proposed by the celebrated *Astruc* against *Boerhaave's* opinion, is easily solved.

Astruc takes a second argument from the seat and figure of the little venereal ulcers, which he has stated to appear in *vasculis sabaceis, quibus in viris balanus, balani corona, præputium, et frænum; in mulieribus vero cadurda, vulva, pterygia, clitoris, et vaginæ ostium, consita sunt*; “in the sabaceous vasculi, “in which the balanus, crown of the balanus præpuce, “and frænum in men, are seated; but in the cadurda, “vulva, pterygia, and ostium clitoris, in women.”* Nor does he affirm this only of these parts which are greatly infested by little venereal ulcers; but states that *idem quoque debere intelligi de pustulis venereis, quarum sedes est in sebaceis vasculis, sive lacunis, per cutem sparsis*; † “the same ought to be understood “of venereal pustules, whose seats are in the sabaceous vasculi, or the lacunæ spread through the skin.”

Anatomy teaches, that such lacunæ, or furrows, are to be found in the skin, into whose cavity an oily humour is secreted by the arteries, and afterward going out by straiter passages, oils the skin and preserves it flexible and soft; and whilst that same humour is hindered from going forth by whatsoever it is sharpened in its delay, and distends the little bag in which it is contained, and creates tumours, which sometimes grow to a great size. The liquor secreted in these furrows is fat and oily; if therefore the face of a sound man be rubbed with a clean white cloth after sleep, especially about the sides of the nose, a greasy spot will be found on the cloth. It cannot be denied that these lacunæ or furrows contain a humour which can entangle the contagion of the Lues Venerea; and that perhaps venereal pustules are from thence so often bred on the face. But it cannot from thence be concluded, as the celebrated *Astruc* would have

* *Astruc de Lue Venerea, lib. ix. tom. II. p. 1073.*

† *Ibidem.*

have it, that these little ulcers have a seat not only in the integuments, but that they penetrate the fat or cellular membrane. I greatly wondered whilst I read the following circumstances, by which he believed that this assertion could be proved, viz: *Ex orbiculari ulcusculorum forma, quæ cum vasculorum figura apprime congruit, ac tandem ex cicatrice nulla post curata ulcera superstite, vel tenuissima tantum, & ferme inconspicua, quod proinde, cutaneum integumentum superficialiter ad summum, funditus vero minime, erosum fuisse, demonstrat*: “From the orbicular form
“ of the little ulcers which particularly agrees with
“ the figure of the vessels, and finally from the
“ want of a remaining scar, which can hardly be
“ discerned after the cure, it is demonstrable, that the
“ cutaneous integument is corroded towards the
“ more superficial part, but not at the bottom.” He afterwards adds, that the same circumstance appears in the venereal ulcers spread through the rest of the skin of the body. Certainly I appeal to all those who have seen venereal ulcers, and treated them, whether they have not seen unseemly scars. This matter will be treated of in the following section, wherein these ulcers will be described with great exactness.

The third argument brought by *Astruc* * begins thus: *Neque suam indolem deponit virus venereum, dum veterascit*: “Nor doth the venereal virus change its
“ nature whilst it grows inveterate.” It seems that the words of *Boerhaave* had been misunderstood by him; † for after he had described a melancholy case of a young nobleman, whose back was all overspread and eaten up by venereal ulcers, he says, *unde sanatione perfecta, mira deturpati corporis apparebat facies*; sub-juncta sequentia: *ex hoc casu didici singulare hujus morbi ingenium; vidi ex eo Luem, ut in principio sui exortus in Europa se manifestaverat, atque a primis auc-*

E 4

toribus

* Astruc de Lue Venerea, lib. IX. tom. II. p. 1073.

† In Præfatione Aphrodisiaci.

toribus in hoc libro describitur; conspexi rationem, qua variolas Hispanicas vocaverant primo oriendum in Europa morbum; sed simul intellexi, quam ingens sit discrimen inter malum hoc, quod tum apparebat, & illud, quod nunc pervulgatum Europæos affligit: “ From whence, after the cure, the surface of his body appears wonderful,” he subjoins the following: “ I have learned the nature of this disorder from this singular case; from this I have seen the Lues Venerea as it had manifested itself in the beginning of its birth in Europe, and is described from the first authors in this book. I have observed the reason for which this disorder, in its rise in Europe, was called the Spanish small-pox; but I have also understood how great a difference there was between that which then appeared, and that which now spreads and affects the Europeans.

For he seems to believe that *Boerhaave* thought that the venereal virus laid aside its nature, whilst it prepared for itself, and grew old in, a receptacle in the human body. I am certain *Boerhaave* never thought so, whilst he well knew, that where this filthy disorder infects the body, it acquires strength in its course; but he was willing to indicate that this disorder was more fierce in its entrance into Europe, and observed to be more mild in our times; that some certain symptoms now occur in the Lues Venerea which did not before, &c. But *Astruc* himself confirms this by many arguments, as will manifestly appear from what will be afterwards said of this matter. But a celebrated author * stated the following opinion: *Contaminato quidem sanguine, humores, qui a sanguine scaturiunt, contaminari necessum est, non promiscue tamen, & indiscriminatim, sed ordine certo:* “ The blood being contaminated, the humours which flow from the blood will necessarily be contaminated; but not indiscriminately or promiscuously, but in a certain order.” But he calls that

* *Astruc de Lue Vener. tom. II. lib. ix. p. 1073.*

that order, according to which the Lues Venerea is accustomed to proceed, a ladder of affinities, which he repeats only in a summary manner in this place; but he elsewhere describes it more fully, where he has asserted, *Perpetuum est in Siphyliticis, semen, & seminales humores, contaminari; quacumque via, non genitalium modo concumbendo, sed etiam mammarum lactando, oris sugendo, vel basiendo, cutis cubando, &c. contagium conceptum fuerit*: “That the seed and the
 “feminal humours are constantly contaminated in
 “the infected, by whatever way the infection was
 “taken by coition; but by suckling of the breasts,
 “kissing the lips, lying together, or touching of
 “the skin, * &c.” But from these things which are alledged, in Sect. 1442, it is sufficiently manifest, that the Lues Venerea may come from the body, though no evil manifests itself in the genitals.

And this in the mean while is true, that Astruc does not so firmly trust to this ladder of affinities as if it had been above all exception, and that symptoms of the Lues Venerea could never vary from his proposed rule. *Quantumvis enim natura, si sibi permittatur, & omnia paria sint, propositam normam affectare aperte videatur, docuit tamen experientia, multa sæpius intervenire, quæ ordinem varie pervertant & inturbant*: “For though nature, if left to itself,
 “may, *cæteris paribus*, seem openly to affect this
 “proposed rule, yet experience hath taught, that
 “many causes happen, which variously pervert and
 “interrupt that order.” †

The causes which may totally disturb this order are afterwards rehearsed.

Many more circumstances may be opposed to this ladder or scale of affinities, which determines a successive series of the symptoms of the Lues Venerea. But that I may not dwell too long upon the subject, I will consider that only which concludes the whole.

A

* Lib. iv. cap. 2. p. 298, in prima edit.
 de Lue Vener. lib. IV. cap. ii. p. 300.

† Astruc

A celebrated * author hath affirmed the venereal seed to be of a salt acid, and that the wax of the ears, and the bile or gall will, last of all, feel the effect of the venereal contagion ; because they have an acrimony and an alkaline salt opposing it. But these are precariously assumed ; for the species of acrimony, which lies hid in the venereal contagion, has not been demonstrated by any experiments ; and, as far as I know, the human bile is not a natural alkaline salt. I have sometimes seen patients attacked with a succeeding deafness, against which no remedies could be effectual whilst the Lues fed upon the organs of the ears ; yet I could not observe that the wax of the ears had degenerated from its nature ; or that an account of this deafness could be deduced from thence. The way seems to be far more short by which the organs of the ears may be affected by the Lues. The mucose membrane which invests the inner parts of the mouth is carried along the Eustachian tubes, and clothes their internal cavity. But *Astruc* † puts that mucous matter which flows from the glands, inside the jaws, roof of the mouth, or tip of the throat, in the third order of those humours to be infected by the contagion of the Lues. But whilst the venereal ulcers occupy these places, this evil can very easily creep forward through the Eustachian tubes into the cavity of the tympanum, as the inferior extreme of these near either tonsillæ appears on both sides behind the velum pendulum of the palate. It never appeared to my observation, that a deafness ever proceeded from the Lues Venerea, though the inside of the mouth had been attacked with venereal ulcers, without some manifest signs of the vail of the palate being corroded, and at least some scars in those who had already been cured. From whence I believe, that this evil very seldom begins in the passage of the ears, or from wax collected there.

In

* Astruc de Lue Vener. lib. IV. cap. ii. p. 299.

† Ibid. p. 298.

In that recital of the diversity of humours, the celebrated author has made no mention of the fat, or of the *membrana adiposa*; but repeating that same scale of affinity afterwards in his second edition,* he, in recapitulating the same, omitted the eighth article, which was in the first edition, and contained the wax of the ears and the bile; he afterwards adds the following: *Sed in iis omnibus constat experimento, nec adiposam membranam, nec ullas membranæ illius lacinias, affici, lædi, pessumdari, neque adeo adiposam pinguedinem, qua turgent illius cellulæ, ullo modo vitiari*: “ But in all these circumstances, it is proved by
 “ experience, that neither the *membrana adiposa*,
 “ nor any parts of that membrane, are affected or
 “ hurt; nor that the thick fat with which it is
 “ swelled is in any manner infected.

But he immediately subjoins some other circumstances which mitigate the former; for he does not deny that the venereal moisture is sometimes brought to this membrane, in cases where the ulcers had eaten away the skin, &c. *Si virus Venereum cum adiposa pinguedine sponte misceatur; quam ejus virulentia inaccessible esse, nequaquam puto*: “ If the venereal virus
 “ be spontaneously mixed with that adipose fat,
 “ which by no means I imagine to be inaccessible to
 “ its violence.”

But a place in the first volume is cited in the second edition, in which nothing of this matter is found: he at length concludes, *Sed hæc nedom quotidiana sint, inter insolentia Lues symptomata referenda sunt, in Siphyliticis, si unquam, certe tarde & raro obvia; unde videtur egregie refelli opinio de sede morbi in adiposa membrana*: “ But these are by no means to
 “ be met with daily amongst the offensive symptoms
 “ which have been related of the Lues; if ever they
 “ occur it is but rarely; from whence it appears that
 “ the opinion concerning the seat of the disease in
 “ the *membrana adiposa* has egregiously failed.

And

* Astruc, tom. II. p. 1074.

And it is immediately confessed in the following number, * that the venereal disease may make a supuration in the membrana adiposa, because the peculiar nature of the membrana adiposa may give a more opportune place for the increase of the evil. *Nempe mollis est, & laxi contextus, tenuissimis ac præ-teneris cellulis tota constat, perpetuo turget congesto succo adiposo, qui tardissime circulatur, ac in loco eodem hæret diutissime.* “That it is soft and of a loose
 “ texture, and totally consists of very slender and
 “ tender little cells, swells perpetually with a fat
 “ juice, which is very slowly circulated, and adheres
 “ very long in the same place.” He confesses, the fat being affected, that the corruption is quickly dispersed far and wide through the body; and that this is done, the muscles and skin still remaining entire. How wonderful is the diversity of opinions in the same page!

But it seems that *Astruc* had sufficiently perceived the force of *Boerhaave*’s arguments; but as they agreed not with the scale or degrees of affinities which he had affirmed, he endeavoured to elude them, and finally declares, *opinionem de sede Lues Venereæ in adiposa membrana, cujuscumque pretii esse videatur, si non perfecte expressam, saltem non obscure olim adumbratam fuisse,* † “that the opinion concern-
 “ ing the seat of the venereal disease in the mem-
 “ brana adiposa, whatever its merit may be, had
 “ formerly been, if not perfectly expressed, at least
 “ it had been obscurely hinted.” But this he endeavours to prove from this circumstance; that before the year 1570, some had been of opinion, that the fleshy membrane, and not the adipose membrane, as by *Boerhaave*, *sed carnosum panniculum, in universo corpore diffusam, illudque tegentem, constituerent, a quo perniciosæ hujus Lues scaturiginem emanare crederent;*
 “ expanded throughout, and covering the whole
 “ body,

* *Astruc de Lue Vener. tom. II. p. 1074.*

† *Ibid. p. 1075.*

“ body, was the fountain from whence this pestilence
 “ was poured out through the whole mass of the
 “ body.” I always admired the celebrated *Astruc*’s
 great erudition ; yet I do not wonder that *Saporta*
 neither was read by *Boerhaave*, or if read, was not
 quoted by him ; but he was skilled in anatomy, and
 probably knew that *panniculum carnosum*, shaggy car-
 nosity or membrane, may be found by dissection in
 the bodies of some quadrupedes, but none in man ;
 from whence some other seat must certainly be that
 of the Lues. Those who thought so, may from
 hence be easily confuted.

Afterwards, where the cure of this disorder will be
 treated of, it will appear how much use the emaci-
 ation of the body may be of, by diet, salivation,
 sweats, &c. for almost the whole fat of the body
 being loosened and expelled, the venereal virus al-
 ready freed from that tie, is discharged from the
 body, and health returns ; from whence the opinion
 of *Boerhaave* appears to be greatly confirmed.

Whilst the contagion of the Lues occupies any
 certain part, it will also occupy the neighbouring
 places by its growth, if an efficacious remedy be
 not speedily applied ; and though it may manifest
 itself for the most part in external places in its be-
 ginning, by these signs which were mentioned in the
 precedent section, yet it is to be feared, that it
 may not, sooner or later, reach the internal parts,
 by creeping on, as it were ; so it often produces the
 worst and most incurable evils, whilst it occupies
 those parts.

The lips, gums, palate, tongue, jaws, nose.] All
 these parts want a thick skin, they are covered with
 a mucose membrane, on which the outside skin only
 lies defending a number of nervous little papillæ,
 rising forth from that mucose membrane.

If the venereal virus shows itself in a membrane
 composed of a tough, mucose fat, or folded in a
 thousand doubles or wrinkles, it is fully known
 how

how difficult it is to extricate it from thence, as this membrane is always nakedly exposed to the air. Hence a quick application of an effectual remedy is necessary. But this membrane covers the bone of the palate, nose, nostrils, nails, the os planum, the hollows of the jaws, and the hollow cavities in the os frontis;* if this membrane should be already gnawed by a venereal ulcer, the bone which it covers is necessarily corrupted, as it is slender and but a thin plate, neither can it be preserved by any art, for a caries attacks it, and proceeds unto the sutures in whose vicinity this little bone is placed, and totally corrupted, fall altogether, or by parts; for the pereostrum being destroyed, these little bones putrify and waste away with a caries.

The bone of the nose being thus affected, the nose falls, and the face, formerly elegant, is deformed; these bones of the nose being so affected, the nose is erased, and the cartilages of the nose being destroyed, the holes of it perpetually appear, and discharge a mucose mixture, which the miserable patients can never more keep clean. If the vail of the palate be either entirely or partly corroded, if the roof of the mouth be destroyed, it occasions an ugly spectacle of what meat and drink is swallowed; as they partly come through the nose; the voice remains most disagreeably squeaking during life; whenever they speak, this shocking voice proclaims what a filthy evil they have laboured under. I have seen the hinder membrane of the pharynges so eaten away by a venereal ulcer, that the vertebræ most miserably appeared rotten to our eyes in bodies when naked.

A good medicine may still free the rest of the body from this distemper, but the deformity will be irremoveable for ever after: from hence *Boerhaave* thus excellently advised: ‡ *Qui præter id, quod artis potestas habet, promittere non vult, cavebit inania jactare;*

* In Præfatio Aphrodisiaci.

‡ Ibidem.

tare, quando fædum, putrem, rancidum, ichorem, naribus emungi copiose videt, aut ulcera, lardo similia, faucium posteriora, velum pendulum, tonsillas, membranam crassam palati, depasci cernit. Sed, omnia bona sedulo applicans, negligens nihil, varia tentans, semper interim de exitu sollicitus, in Prognosi prudens, stentores securus ridebit, dum interim miserescit ægri.

“ He who will not promise what lies beyond the
 “ power of art, should be cautious of vainly speaking
 “ when he sees a foetid, putrid, disagreeable excrement,
 “ copiously wiped from the nostrils, or when he ob-
 “ serves such ulcers in the hinder parts of the jaws, like
 “ the fat of bacon ; the pendulous vail, the glands
 “ in the inside of the jaws, and the adiposa membrana
 “ of the palate, eaten away ; but should exert him-
 “ self in sedulously applying every thing that is good,
 “ neglecting nothing, and trying many ways ; still
 “ in the mean time sollicitous about its expulsion,
 “ prudent in the foreknowledge of it, he will se-
 “ curely mock the forward coxcombs, whilst he in
 “ the mean time is moved with compassion for the
 “ patient,” These ulcers of the jaws deserve to be
 truly distinguished, that they may not sometimes be
 confounded with other evils of the jaws. Where
 the quinsy has been before mentioned, I have ad-
 vised, that when the inside of the mouth is sore for
 some hours after a slight flying fever ; and that when
 there appears a white spot, which sometimes grows
 yellow with a margin about it, somewhat reddish,
 and very sore ; if such spots be neglected they creep
 on, the breath becomes putrid, and the parts affected
 are sometimes deeply corroded. These often happen in
 scorbutic persons, and in the younger part of man-
 kind ; nor are they difficult to be cured, if a reme-
 dy be timely applied. They are nevertheless easily
 distinguished by that red sore border, and by their
 easy manner of obeying the remedies, so that the
 place affected will be soon cured : but in venereal
 complaints there, we observe contrary effects ; as
 hath

hath been said in the preceding section. That bacon-like colour which is in venereal ulcers inside the mouth, will give the physician sure and certain signs of this distemper; as he views these evils with attentive eyes. *Fallopious* † calls these ulcers *sine cortice* as he describes them, then says, *Color est in mediis albus; circumquaque, voluti carnis porcinae salitæ color; hic non potest explicari, non enim est ruber, non albus, non pallidus; sed secate per transversum pernam, talis est color pustularum sine cortice, & tales apparent sub palato, &c.* “The colour is white in the middle, around which is a colour resembling that of the flesh of salt pork: this colour cannot be explained, for it is neither red, white, or pale; but cut through, such is the colour of pustulæ sine cortice, and they appear as such under the palate,” &c. These venereal ulcers spread wider in these places than they grow deep: hence they feed upon their neighbouring places, and are followed by the foulest of evils. In the body of an old man just at death’s door, by an evil use or mispending the most part of his years, who could hardly be understood when he spoke, were found the following circumstances by the celebrated *Morgagni*. ‡ *Uvula, cujus pars deerat; linguae posterior suprema superficies, & annexa olim per ligamenta Epiglottis cartilago, ita erant cicatricosæ, ut nihil magis. Itaque ea cartilago, inæqualiter contracta, in triangularem propemodum verticem desinebat, multo caninae similior, quam humanæ. Quin vitium in laryngem reliquam, & huic proximum Arteriæ asperæ truncum, se propagabat, eratque Arytænoidum altera quasi luxata, non compari paralela: intra illam autem arteriam inæquales magnique quasi prominebant lacerti, &c.* “A part of the uvula was wanting, the posterior upper superficies of the tongue, and cartilage formerly annexed by the ligaments of the

† *Aphrod.* p. 824.

‡ *De sedibus & causis morborum, &c.* tom. II. p. 198.

“ the epiglottis were so chopped or scarred, that no-
 “ thing could be more so ; so that the cartilage
 “ was so unequally contracted, that it ended in al-
 “ most a triangular vertex, much more like a ca-
 “ nine than a human one. But the imperfection
 “ propagated itself in the remaining larynx, and in
 “ the neighbouring trunk of the wind-pipe, and
 “ one of the arytænoides was as it were loosened,
 “ and not parallel to the other, but between the
 “ arteries, some great and unequal brawny sinews
 “ stuck out,” &c. We must not from hence won-
 der that his speech remained grating and difficult to
 be understood, after these ulcers inside the mouth.
 But if this filthy evil creeps through the wind-pipe,
 sometimes an incurable asthma will follow ; which
 if it should come, Fallopius || tells us it is incur-
 able, saying, *Non crucietis agram asthmaticum, quia non*
sanabilis ; “ do not excruciate the asthmatic patient,
 “ for he is not curable. *Petit*,* famous for his art,
 saw the wind-pipe corroded by the venereal dis-
 temper, and he happily cured it ; after the cartila-
 ginous annulus was separated from the rest of the
 sound parts the length of four or five tenths of an
 inch, a hole remained which would take in the top
 of a finger.

It plainly appears, that the venereal disease, whilst
 it occupies the larynx and the wind-pipe, may, as
 it were by a declivity, reach to the lungs. I have
 myself seen a rib truly swelling by an inveterate
 Lues, and surrounded by a venereal gum, which,
 in a short time, degenerated into a foetid ulcer,
 and creeping behind the affected rib already pu-
 trified, it infected the internal parts of the thorax,
 with a deadly event. *Bennetus*, † so often praised in
 the chapter treating of the consumption, said, *Bis*
morbi indici virus in thoracis capacitatem refluxum ani-
madverti, conquiescente signorum flagellantium caterva,
 VOL. XVII. F quibus

|| Aphrodisiac p. 781, 782. * Academ. Royale de chirurg.
 tom. 1. p. 348, &c. † Tabid. theatr. p. 35.

quibus Lues stipata venit, immaniter vero Jæviente phthisi; unde anhelitus, fætor nequissimus, & pulmonum fere totalis devastatio per putredinem. Quod ex aperto utriusque patuit cadavere. But in a simple gonorrhea, and in a detension of the menses, he had sometimes observed, *cum tussis acriter premens, & spirabilium suffarctus. supervenerint, simulac materia tralatitia consistentiam extrusioni aptam adeptæ fuerat, tussisque aliquantis per sedata, pessiisse profluvium.* † “ I have twice
 “ observed the virus of the venereal disease, flowing
 “ back into the hollow of the thorax, whilst the
 “ train of signs attending it lay quiet; but an ex-
 “ ceeding grievous consumption proceeded from
 “ them; from whence ensued a shortness of breath,
 “ a most filthy stench, and almost a total devasta-
 “ tion of the lungs, by putrefaction, which ap-
 “ peared in every part of the body. But in a gleet,
 “ when a cough and a stoppage of the breathing had
 “ followed, when the foreign matter had gained a
 “ fit consistency for its expulsion, and the cough
 “ been for some little while abated, the discharge
 “ ceased.” It is very certain, that an incurable consumption often happens in the case of an inveterate Lues, which oftentimes may be imputed to a repeated salivation, or to an imprudent application of it; chiefly in old bodies, so hack’d that the constitution of the body in spitting of blood, renders them more subject to a consumption; from these circumstances, those others, which have been mentioned in number 1, of Sect. 1198, may be seen. Yet as a consumption by its own nature, is a disease very difficult of cure; it appears what little hope remains when the venereal disease concurs with it. *Antonius Musa Brasavolus* * also remarked, that a small wound, only received twenty-four hours before, would take up forty days to be cured, in a person infected with the venereal disease; he therefore lays down the following as an axiom: *Quotquot ab hoc affectu*

† Tabid theatr. p. 35.

* Aphrodisiac. p. 729.

effectu male tractati fuerint, & tamen sanitatem adepti sint, quemcumque inciderint in morbum, semper morbus ille, in quacumque sit specie, vehementior in talibus efficitur, quam esset, si hic non fuisset morbo Gallico affectu: “As many as laboured under the evil effects
 “of this disorder, and though they obtained health
 “again, into whatsoever disease they fall, that will
 “more vehemently affect them than it otherwise
 “might if they had not been affected with this
 “disease.”

The brain.] Though the Lues may sometimes occupy any parts of the body whatever, it nevertheless attacks the upper parts more frequently; the pimples of the face teach this, as they often occur, together with ulcers in the nostrils, and inside the mouth, &c. but as the tender bones of these parts are infected by the corroded membranes covering them, the evil is propagated to the bones of the skull; and from hence, the included brain is very badly affected, and various disorders of the head follow. Disorders of the brain are often observed to degenerate, in persons seized with the Lues Venerea, from the slightest megrim to a deadly apoplexy, also to the severest epilepsy, blindness, deafness, &c. I have seen in an inveterate Lues, as will be said in Sect. 1454, that it is wont to occupy the middle of the bones, especially in the cranium; some gummy tumours and exostoses may be bred in the internal parts of the bones of the skull; these parts then pressing upon the brain disturb all its functions, and oftentimes distil a filthy putrid corruption, when the *tabula vitrea* is corroded. I have thus seen the right bone of the skull so consumed with an intolerable stench; so that from hence, these sharp and lasting pains of the head, may be reckoned due to the Lues. Those are observed by *Botallus* †, in a man who was for some months excruciated by the most acute pains, around his temples, and the forepart of

† Aphrodisiac, p. 488.

the head, having passed the nights without sleep. He would have prepared some means of removing the pain, which gnawed the man's bones, by hot irons or scarring the parts affected; but the patient would submit to no such trial upon him: his eyes began to lose their sight, whilst he seemed to perceive flying gnats, and spiders webs, until he became blind. The patient then growing terrified, agreed that the scarring should be applied to the forepart of his head, where the pain was sharpest; but he would not suffer that the place should be kept open, which was of itself cicatrised by a scab which fell off. He died in about forty days. *Inventum fuit cranium, in conterminis coronalis ac sagittalis commissuræ, sphaculatum, putidumque, coronati regii latitudine; statimque, cranio serra aperto, abundans ichor putrilaginosus, instar aquæ fuligine fumarii & croco aspersæ, profluxit, tum per ossis aperturam, tum per aures & nares; membranæque putidæ recta ad os affectum, verum adhuc integræ, erant; quæ solo tactu facile rumpebantur: corruptum & cerebrum, & nervi optici: cætera vero viscera integre habebant.* "The cranium was found morbid and rotten, for the breadth of a crown piece, and the seam compassing the forehead: the cranium being opened with a saw, an ulcerous excremental water appeared, of the colour of saffron, and flowed through the cut or opening of the bone, and also through the ears and nostrils; the membranes towards the defect in the bone were affected and rotten, though still entire, yet might be broke with a slender touch; and the brain was corrupted, and the optic nerves also, but the rest of the internal parts were entire."

The liver.] It is known that sanguification was formerly ascribed to the liver; for besides the vena porta, the great trunk of the vena cava ascends through the liver, and tends to the heart, and since the veins of the viscera, which separate the chyle, run together into the vena porta, the com-

mon

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mon opinion was, that the chyle was conveyed through the gastric and meseraic veins into the liver, and by the power of this entrail, was changed into blood, to serve for the use of the whole body. But after the circulation of the blood was demonstrated, and the ways by which the chyle became blood were more exactly known, that notion of the liver was exploded. Bartholinus wrote an epitaph on the author of such an opinion, as if he had been dead and buried. Hence it is no wonder, that some physicians, who wrote of the Lues appearing in Europe, had attributed these symptoms, which appeared in all the rest of the body, through a venereal contagion, to the hurt or corroded liver. Thus by those authors concerning the solutio continui of the liver, the variety of the constitution of this entrail, some long and tedious dissertations are held upon the matter, according to four defined constitutions. But the cure of this filthy disease was first attempted by various apozems and altering syrups, that being thus prepared, the matter might be rendered moveable, and easily evacuated by emetics, cathartics, sudorifics, &c. They likewise bestowed much pains in preparing compound remedies, which ought to be different in sanguine constitutions from those in phlegmatic, in bilious, than in atrabilious; others have considered some of these constitutions combined together, and from thence a new method of cure was deduced; so some authors have compiled such a heap of prescriptions, so as to be disgusting, as will manifestly appear to all those who read the collection of the authors who wrote of the Lues, before the year 1567, of which, under the title of *Aphrodisiaca*, mention has often been made above.

Some, amongst these, ascribed this disease to the various indispositions or bad constitution of the liver, and the most part of them held the Lues Venerea for an antient disorder; some others acknowledged it to be a new contagion, but insisted that the liver

70 The VENEREAL DISEASE. Sect. 1445.
was immediately infected by it, and that the distemper was afterwards propagated from the liver through all the parts of the body; that various effects were produced by the diversity of the constitution of this intestine.

Therefore as they all accused the liver, *Fallopins* * was resolved to look out for the truth of this assertion, in dead bodies; and as Monardus, and after him Montanus as was believed, had asserted that there is a solutio continui in the liver of those labouring under the venereal disease, he demonstrated the contrary: *At hoc falsum est, quoniam in hepate, non tumoris, non ulceris, non vulneris, adest vestigium. Ego volui per anatomen hoc experiri, et secui in uno anno plusquam quinquaginta homines, et nunquam inveni solutionem continui in hepate.* “ But that is false, “ because in the liver there is no trace of any tumour, wound, or ulcer; I was willing to examine “ this matter by dissection, and I have dissected “ more than fifty bodies in a year, and never found “ that solutio continui in the liver.” But as *Fallopins* was well skilled in anatomy, as his observations on that art teach us, he is entirely worthy of credit in these matters. Afterwards he in the following chapters, explodes those opinions concerning the cold or hot, &c. indisposition of the liver, as far as was relative to the Lues Venerea; and he gives us the observations † upon a young man, infected by a prostitute, in one action of coition only. *Nihil apparuit in pudendo. Sequenti die statim cepit erumpere bubo, & postea tota barba, supercilia, & capilli, evanuerunt; laboravitque doloribus intensissimis. Cur ergo hic potuit infici ita valide, ut sequenti mane hepar materiem ad pubem remiserit?* “ nothing appeared in the pudenda; the day following, a bubo “ began to break out, afterwards all his beard, “ eye-brows, and hair fell off, and he laboured under the most grievous pains imaginable: how “ there-

* Aphrodisiac. p. 771.

† Ibidem, p. 777.

“ therefore could this youth be so furiously affected,
 “ as that his liver the morning following had dis-
 “ charged matter by the pubes?” But it is true,
 that the liver could not be blamed, as if the venereal
 virus, as some would have it, was bred entirely in
 this intestine, or that it is first of all parts of the
 body infected, by the contracted contagion; still it
 cannot be denied, that the liver, and other intestinal
 parts have been injured by the Lues Venerea. Mar-
 cus Aurelius Severinus *, in a famous hospital for
 the patients in the venereal distemper, cut up a great
 number of bodies, *et complures offendit, quibus exul-*
cerati, tum oesophagus, tum trachea, quibus item pus-
tulosus pulmo, pustulosumque jecur, apostemodes vero pro-
statæ, sunt animadversi, &c. “ and found many more
 “ ulcerated within side, at the mouth of the sto-
 “ mach; the lungs were also found full of blisters
 “ or pustulæ’s, and the liver also; there were ab-
 “ scesses in the prostatæ blown full, they are re-
 “ marked,” &c.

The celebrated Baadar † *vidit totam exteriorem*
hepatis superficiem densis & sat magnis papulis seu tu-
berculis plenam, quæ omni nota characteristica illis per-
fecte similia erant, quæ in facie, manibus, &c. homi-
num Lue Venerea inquinorum alias videntur. Dis-
cissa hæc tubercula intus eandem materiam continuerunt,
quam in gummi Venereis, & steatomatibus, alias cer-
nimus, “ saw the whole outside of the liver in the
 “ dead body of a woman, fill’d with thick whales
 “ or carbuncles, which every way resembled those
 “ that appear on the face and hands of a person
 “ infected with the venereal disease. These pustules,
 “ when cut open, discharge a matter, such as we
 “ observe in many other venereal patients.”

A great many other observations were collected by
 the celebrated Morgagni, ‡ who tells us, *pulmonem,*
F 4
aortam,

* Astruc de Lue Venerea tom. II. p. 921.

† Observat. Med. incisionibus Cadav. Anatom. illustrat. p. 181.

‡ De sedibus & causis morbor. &c. tom. II. p. 369.

aörtam, & renes cum suis appendicibus, sæpius aliquanto occurriffe labefactata in iis, qui Lue hac diu & graviter laboraverunt, quam ex plerorumque librorum lectione facile existimes, “ that you may easily estimate, by “ the lecture of a few books, how much the lungs, “ aërta, kidneys, and all their appendages become “ weakened in those persons, who a long while laboured under the venereal distemper.” He adds, that he never remembered to have found the liver infected, in persons labouring under the Lues Venerea; neither does he deny that corruption has been found in this intestine, when bodies suffered with the Lues. For this great man was *probe conscius, banc Luem, ut sub cujuscumque morbi larva interdum delitescere, ita quodcumque viscus vitare, posse,* “ well “ satisfied, that as this Lues sometimes hides itself, “ under the mask of any other distemper whatsoever; so every intestine may be deformed or “ corrupted by it.” He afterwards relates observations from approved authors, who tell us, that the whole uterus has been ulcerated by the Lues Venerea; from whence no doubt remains, that the internal as well as the external parts of the body may be affected by this disease.

But this filthy virus corrupts even the marrow in the very channels of the bones, and causes the most severe torment, as will be afterwards explained in sect. 1452.

It has been observed by *Antonius Brusa Brasavolus*, * that the nails have fallen off by the Lues, the teeth have also fallen out, and the eyes have been destroyed; nor did these terrible effects attend the disease already grown inveterate; but he remarks, that the distemper sometimes had begun with these symptoms; so he testifies that the falling of the teeth hath sometimes preceded, and sometimes hath followed after the shedding of the hair; he affirms the same about the loss of the eyes.

In

* Aphrodisiac. p. 659.

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In another place, * he says, the falling of the teeth, and generally of the hair, follows; *quandoque bubonem simpliciter, & illas primas enarratas affectiones, quæ in pene sunt, atque ore*: “sometimes, “likewise, a simple buboe, and those first mentioned “symptoms, which are in the penis, and in the “face.” But the teeth fell without any blemish in in them; for they were neither corroded, rotten, nor putrid. It is well known, that after a salivation, especially if a severe one, the teeth will sometimes fall out; nor is that any wonder, as the gums are then ulcerated: but here no mention is made of a salivation. Bernardinus Tomitanus, † in his writing concerning the changes observed in the Lues Venerea, about the hundredth year from the beginning of this disorder, remarks, that the shedding or casting of the hair, beard, &c. was very frequent; he then adds, *Vidit ætas proxime æta, in multis fieri dentifluvium; parcius nunc id videmus; ac multo sæpius, cadere supercilia, capillos, & barbam, experimur*: “That “he the last age saw the teeth of persons afflicted “with this disease frequently fall out. We now see “that but rarely; but we much oftener find the “hair, beard, and eye-brows to fall off.”

From hence it is evident how extensively the power of this dire disease spreads through the human body, since there is scarce any part free from the access of the filthy distemper: what calamities, what enormous pain, what deformity are bred in a body formerly perhaps the fairest and most comely, whilst the inveterate Lues gnaws all its members by a slow corruption, whilst still in the bloom of youth! ‡

*Jam nimium fidentem animis, nec tanta timentem,
Invasit miserum labes, qua scævior usquam
Nulla fuit; nulla unquam aliis spectabitur annis.
Paulatim ver id nitidum, flos ille juventæ,*

Disperit,

* Aphrodisiac. p. 727.

† Ibidem, p. 1053.

‡ Fracastor. ibidem, p. 187.

*Disperiit, vis illa animi; tum squallida tabes
 Artus (horrendum) miseros obduxit, & alte
 Grandia turgebant fœdis abscessibus ossa
 Ulcera (Proh Divum pietatem) informia pulchros
 Pascebant oculos, & diæ lucis amorem;
 Pascebantque acri corrosas vulnere nares.*

I believe that there cannot be a greater, or a more powerful check to sensuality, than to behold and contemplate the miserable victims to this disorder attentively, as they lie collected in hospitals to be cured of one and the same disorder, branched into various horrid complaints or evils. I am certain the protector of the gardens, Priapus himself, would lay aside all his erect pride at such a sight.

S E C T. MCCCCXLVI.

THESE infected parts discharge a filthy, putrid, flow, mucose, greenish corruption, which corrodes the flesh rather in breadth than in depth, as it glides along.

It is of the greatest utility in the medical art, that venereal ulcers be well distinguished from others, that their proper cure may be applied to them. As venereal complaints obey not the common or accustomed remedies, see Sect. 1444, it was said in the precedent section, that the venereal contagion was entangled, in the tunica cellulosa, in adipose fat, or in a mucose humour, and so adheres to various parts of the body, then corrodes them by a prolific contagion, by whose power all the parts are corrupted, till, every particle being infected, the materials for a new infection are prepared.

But as the disease is usually bred by the first touch only, and hence affects that part of the body

first

first touched by its corruption; so as it was said this disease differs, according as the part affected is chiefly covered by the cutis, or the cuticula only. It has been before shewn what are the consequences, if the Lues is lodged in places covered by the cuticula only; in this section are mentioned the signs by which a venereal ulcer may be known, which attacks those parts covered by the cutis. But as the celebrated *Boerhaave* * has exactly described these matters, I shall almost use his very words on the subject.

He first of all remarks, that if those places covered with skin had been first infected by the venereal contagion, then an ulcer of the worst kind is bred there, and very difficult to be cured; then it would be greatly to be feared that the evil would creep over the rest of the body; for the power of the poison, which can penetrate even those parts covered with a solid skin, must be very malignant. Then the place affected is wont to rise to a little swelling, filled with matter of a yellowish cast, like the cream of new milk, scarcely sticking together, like as it were cream, when taken between the fingers, and gently let loose by them; then growing dry and yellowish, from a greenish colour, it hardens on the linen it sticks to. This matter, though carefully wiped clean, flows again; neither is it stopped, nor does it make any separation from the sound parts in suppurating; but, on the contrary, carries away its neighbouring parts with it, and propagates the same virulence in them, and always supplies itself with new matter. Hence, in the same manner, the broad ulcers, which are found in the membrana adiposa, slowly corrupt the integuments, and shew the muscles bare and entire, shining with a fiery red colour.

For if the contagious corruption reaches to the little cells of the membrana adiposa, and there mixes itself with the fat in its course, then this defiles the
tenacious

* In Præfatione Aphrodisiæci.

tenacious or viscous oil by its virulence, and is again retained by that oily humour, is cherished by heat and motion, and more inflamed by delay ; it gnaws the cutis and cuticula, and contaminates the oily little cells in the mean time spread under these skins ; from whence the sore is found broader in the panniculus adiposus than in the skin laid over it, which is eaten away.

The matter flowing from such an ulcer is so different from that of other kinds of abscesses, that the skilful may distinguish that which is cankered by corruption from any other matter ; for the very same matter, engendered by the Luës Venerea, shines as it were mixed with a soapy glewish matter ; it is of a singular whitish colour, turning to a green ; scarcely is the acrimony of it felt by any stinging pain or hurt ; for this membrane only putrifies, without the sensibility of any great pain.

The lips of these ulcers, in places covered with a skin, are never raised, or appear scorched, but contracted, and even as if polished, and of a pale colour. They often as it were fluctuate, when deprived of the support of the membrana adiposa, which is usually eaten away to a greater breadth than the cutis is.

If such an ulcer should be cured, then the skin will grow to the muscles, and have a filthy appearance ; the cavity will often remain deep in those places where a copious fat is spread under the skin, as in the buttocks, attended by a want of motion in the muscles there ; and hence the part is left rigid, on account of the muscles being grown to the scar and neighbouring skin : a livid colour verging to a reddish always disfigures the scar, which is so stretched and dry, that it scarcely perspires, and it appears every where shining, on account of this strong extension.

Such an ulcer being cured, if an efficacious remedy hath not destroyed the contagion, an evil like unto the first will breed in a neighbouring part, which,
following

following the same path, leaves the like evil behind. When the body is over-run with these most filthy ulcers, either in many places at once, or successively, the whole form of the body is disfigured by those ugly scars, and the horrid traces of the filthy disease will perpetually remain.

It appears from what has been said, that these ulcers creep into a breadth rather than into a depth, and do feed only upon the tunica adiposa, but yet not hurt the skin; except that when the vessels placed under the skin are consumed, it totally perishes, the disease having nothing left to feed upon.

Such ulcers sometimes occur after buboes are opened. These are excellently described by that famous surgeon *Goulard*; * for he remarked that these ulcers were not deep but filthy, and the matter that issued from them was scarcely corroding, but mucose. He also tells us, that the first trace of a scar in these ulcers, appears in the middle of the bottom, in the form of a thin, slender, red skin, which extends itself from the centre towards the whole circumference, as in those ulcers which are bred from some other causes, and not from the Lues, the cicatrix beginning from the circumference of the ulcer, proceeds towards the centre. That red colour seems to proceed from hence; that the whole tunica cellulosa being destroyed, the colour of the muscles shines through this slender skin. But the cicatrix can but with difficulty begin from the ambit of the venereal ulcer; because, as it has been before said, such an ulcer is wont to spread itself in breadth, under the skin, until then entire, or at least not yet corroded; and also to consume the neighbouring membrana cellulosa.

Now follows the useful search into those evils, which are observed to have been bred from the venereal contagion in various parts of the body, and produce singular disorders, according to the variety

* Sur le malad. veneriennes, p. 107.

of the parts affected, though they arise from the same cause. But as the Lues Venerea is most frequently contracted by impure coition, the first dreadful eruption generally happens about the pudenda.

S E C T. MCCCCXLVII.

SHANKERS are from thence bred on the outside of the penis, a gonorrhea in the inside, and a fluor, called albus, in the vagina.

As the penis is more exposed to the venereal contagion by impure coition, it is no wonder that this member is often affected even in the beginning of this disorder, as was before said, in Sect. 1442; that such pustules or blisters are very soon bred, either by a local application of the contagion, or by the same contagion absorbed by the veins then mixed with the blood, and afterwards deposited in these parts; in which case, these little ulcers are wont to appear more slowly. In Sect. 1441, where communication of the disease by suckling is treated of, it appears, that the first signs of it appeared in the breast, and that it proceeded to the neighbouring parts of the body; afterwards the pudenda were infected with a violent itching or pruritus, which is followed by ulcers in the pudenda, by which the husbands are infected; and so the filthy disease was propagated.

In those places to which the Lues Venerea immediately adheres, or where it was deposited by a removal, there rises a flat spot in the beginning, as if it were the small-pox, or almost like a flea-bite: in this is a light itching, and scarcely any pain. These spots are in a short time after raised into great blisters, under which form the celebrated *Astruc* * describes

* De morbis vener. lib. III. cap. 7. p. 242.

scribes the venereal ulcers in their birth, in the following words: *Initio levis extuberat papula miliaris, vel miliarem parum superans, rubra, acuminata, calens, pruriens, cujus apex sensim complanatur, & albescit, ac tandem levi apertura debiscit, unde ichoris quidpiam ejicitur. Continuata dein labrorum erosione, ulcus crescit, dilatatur, excavatur; callis cingitur, magis vel minus duris, densatisque; pure crasso viscido, tenace, scatet; & similia ulcuscula in vicinis partibus plerumque excitat*: “ In the beginning, a light blister arises
 “ of the size of a grain of millet, red, sharp pointed,
 “ hot, itchy, the head of which flattens by degrees
 “ and grows white; and finally, by a small opening,
 “ ulcerous matter issues forth. Then by a continual gnawing of the lips, the ulcer increases, is
 “ dilated, hollowed, and surrounded by warts,
 “ somewhat hard and thick, then bursts out with a
 “ thick, viscid, tenacious matter, and for the most
 “ part affects its neighbouring places by such ulcers.” These little ulcers are usually called cancers, as they obey not common remedies; they often have callous lips, are stubborn, and have their bottoms covered with a whitish mucose matter, or of a livid colour. * I have sometimes seen the bottoms of such little ulcers turning green, from a yellowish colour. Perhaps if a little blood has been mixed from the corroded little vessel, that livid colour comes on. So these little ulcers are easily distinguished from excoriations, and other lighter evils in those parts, as these, either spontaneously, or by accustomed remedies, are easily cured.

It is worth while to know, whether these little ulcers are owing to a recent contagion after impure coition, or truly produced by a Lues Venerea, lurking already a long while in the body; in which case, the cure would require more pains and care, as there may be some hope, in the recent evil, that the virus, adhering to these parts only, may be returned back
 again,

* De morbis vener. lib. III. cap. vii. p. 248.

again, without infecting the rest of the body. It is true, that a sincere confession of the sick may take away all doubt; but *Astruc* * judiciously observes, that these often conceal the fault, whilst they are more willing to ascribe the disease to something a long while lurking in the body, than to a recent act of venery. It is convenient enough for widows to throw the whole blame upon their dead husbands; some men already ripened by years, such as have vowed chastity, have readily confessed their juvenile frolics. *Astruc* † still deduces a probable conjecture, from the following circumstances or symptoms: *Si ulcuscula in viris frænum, in fœminis carunculas myrtiformes, nymphas, aut clitoridem, occupent; si multa, maligna, & conferta, sint; si stadia percurrant cum celeritate; probabile est, recenti concubitu contracta fuisse; cum ea, quæ a latente Lue dependent, præputii frænum, aut vulvæ & vaginæ carunculas, non affectent præ reliquis partibus, pauca, discreta, benigna, plerumque sint, ac tarde ut plurimum judicentur*: “ If these little ulcers
 “ attack the frænum in men, or the caruncula myr-
 “ tiformes, clitoris, &c. in women; if they be
 “ many, malignant, and crowded together; if they
 “ run their course expeditiously, it is probable, that
 “ the disorder has been contracted by a recent co-
 “ ition, as those which arise from a lurking Lues do
 “ not affect the frænum of the præpuce, or the ca-
 “ runculæ of the vagina or vulva, but rather the rest
 “ of the parts of generation; they, for the most
 “ part, are likewise, in general, few in number and
 “ mild.” But, as it was shown in the precedent section, the venereal ulcers differ greatly amongst themselves, according as they occupy those places covered with the cutis, or deprived of it. The same is true in the virile penis. These ulcers frequently occupy the glans, and the crown of the glans, and produce other evils there as in other places, v : g :
 the

* De morbis vener. lib. III. cap. vii. p. 249.

† Ibidem.

the slender epithelium that covers the glans and internal superficies of the præpuce being corroded, the little nervous papillæ, so numerous there, degenerate into warts. It would have a far different effect, if such an ulcer should attack the frœnulum of the præpuce, which happens when it adheres to the skin surrounding the outward parts of the penis. Whilst the ulcers corrode the internal superficies of the præpuce, they often excite wonderful, inflamed, pellucid tumours; from whence a phymosis, or paraphymosis, and an inflammation, stoppage and gangrene of the penis; which circumstances will be treated of in Sect. 1449.

Although the celebrated *Astruc* * acknowledged, that all the genital parts are exposed to the same common danger in the time of impure coition, yet he teaches, that an equal degree of corruption is not brought into every part. This truly and evidently appears from what has been before said. But he denies that those little ulcers, or venereal shankers, have ever attacked the external superficies of the præpuce, or the rest of the skin, by which the penis is invested; and so he asserts, that in women these little ulcers occupy some certain interior places of the vagina or vulva, but never any external places. Still I have often been an eye-witness of the external skin of the penis, and exterior parts of the pudenda in women, having been attacked by venereal shankers; nor do I doubt, but all those who have applied themselves to the cure of this disease, have observed the same. But *Astruc* assiduously enquired into the cause why the exterior parts of the penis, and pudenda of women, were never attacked by venereal shankers. He believed the reason might be deduced from the peculiar structure of those parts. † In men he would have it, that the internal and whole superficies of the præpuce, and top of the penis, especially

* De morbis vener. lib. III. cap. vii. p. 243.

† Ibidem, p. 244.

cially the sides of the frœnum, and circumference of the crown of the glans, *densissime consterni vasculis numerosis, minutissimis, vix semilinea profundis, parallelis, cylindricis, cavis, infima parte coecis, altera extorsum dehiscentibus tenui osculo, quæ a circumfluo sanguine humorem album, sebaceum, virosum, secernunt, secretumque stillatim evomunt; unde partium lævitas, sensus, mollities, lubricitas, jugiter fovetur; sed unde, si loturæ parcatur, sordes brevi cumulantur, subalbidæ, oleosæ, fœtidi & gravioris odoris:* “are spread over
 “by a number of thick little vessels, so minute, that
 “they are scarce the depth of half a tenth of an
 “inch, parallel, hollow cylinders, and gaping on
 “the outside with little mouths, which pour out a
 “white, soapy humour, separated from the blood;
 “from whence the lightness, sensibility, softness,
 “and lubricity of the parts are continually supported;
 “but if not washed, the filth gathers in a
 “short time to an oily, whitish, fœtid excrement,
 “of a heavy foul stench.” He affirms the like structure to hold in women, in the internal superficies of the vulva: and all the carunculæ which project in the vulva, he would have it, that these caverns collecting that soapy humour, and discharging it when collected, are the proper and real seat of the venereal shankers. He urges, in support of this argument, that anatomy teaches us that these caverns or cells, are in these places; and it is sufficiently made out by what has been before said, that the venereal contagion may be easily entangled with slow fat, mucose humours, and be so fixed as it were in certain places, that they are afterwards destroyed in a slow, corroding manner.

But the anatomists in general have evidently proved that these cells already described, are not peculiar to these places of the genitals. *Abraham Kaau* found such cells in the buttocks of an infant; and in another

another place, * where he is employed peculiarly in describing these matters, he says, *Est præterea & aliud exsudationis genus, ab interioribus extrorsum, quod æque obtinet eo in loco, quo cuticula pergit supra papillas; ac ubi cutim investit; quod scilicet fit ope folliculorum, qui ubique in cute hærent, nisi in interiore parte manuum, pedum, & in digitis:* “There is besides another kind of exsudation from the interior towards the exterior parts, which equally holds good in that place in which the cuticula goes over the papillæ, and where it invests the cutis; which is done by the assistance of the folliculi which stick every where in the skin, except in the interior parts of the hands, feet, and fingers.” As the celebrated *Ruyschius* was an enemy to the name of glands, and as that candid anatomist could not deny the existence of these folliculi in the skin, he chose rather to call them *cryptæ Boerhaavianæ*; which name is commonly given them at present. An exact description of those cells may be read in the place above cited. Yet this deserves to be known, that the celebrated *Astruc* would have these caverns to be cylindrical, and on the contrary, the celebrated *Boerhaave* *invenerit esse, receptacula quædam parva, subrotunda, cava, collo angustato conniventia, quæ, osculo aperto, nec quod facile humorem intus in folliculo contentum eructat, in epidermide patent, atque ibidem poros cutis formant satis conspicuos:* “had found these to be some certain small receptacles, round and hollow beneath, with a narrow neck with open mouths, which do not easily discharge the humours contained in the folliculi, appear in the outside skin of the body, and form pores in the skin sufficiently conspicuous there.” The figure of these *cryptæ* was not badly described by those instruments of war called hand-granades, which are cast or thrown.

G 2

But

* Perspir. dict. Hippocr. cap. xi. p. 103. & seq.

But it is well known that these folliculi † pour forth a lubricating humour, which anoints the skin, *Et quidem ad illas partes imprimis, quæ aëri externo, vel motui, maxime sunt expositæ, vel pilis ornatae :* “ and especially those parts which are greatly exposed “ to motion, or the external air, or those parts furnished with hair.” Therefore as hair begins to grow on the pudenda of either sex, and the internal parts of the buttocks and thighs, so that they may want such a watry bladder or ball, the rubbing or wasting of which is greatly to be avoided, it is no wonder that a copious number of these windy or watry bags, sufficiently big, are found in those places ; which, if not so, men would have suffered the forest of gallings, as those who long ride on horseback experience, whilst that liquid is pressed from these little bags.

And moreover as all these parts have such folliculi, or a number of such watry balls, and are moistened in the venereal contagion by impure venery, it evidently appears, that shankers, or venereal ulcers, may be bred in those places, and some certain observations also teach the truth of this matter.

In an internal gonorrhea.] This term may be changed in Latin to the genital profluvium, which was known in antient times ; but that was very different from the venereal gonorrhea here treated of. So where the uncleanness is mentioned in the scripture, * we read as follows : *Vir, qui patitur fluxum seminis, immundus erit. Et tunc judicabitur huic vitio subjacere, cum per singula momenta adhaeserit carni ejus, atque concreverit, fœtus humor :* “ A man labouring “ with a seminal flux shall be deemed unclean, and “ he shall be judged to be subject to this defect, as he “ every moment might have adhered to his flesh, “ and a foetid humour might have been caused by it.” The channel of the urethra, as will be presently shewn, is moist with mucose humours, and the prostate

† Ibidem, p. 106.

* Levit. cap. xv. ver. 2, 3.

state gland communicates with it. If, therefore, the secretion and excretion of such humours be augmented, such a humour will be gradually protruded into the cavity of the urethra, and then adhere to the extremity of the urethra, and the internal superficies of the præpuce; this is filthy, but in no manner contagious. Besides, it is to be remarked, that the moisture which flows forth in the venereal gonorrhœa adheres not, nor grows to the top of the penis, but fouls the linen by a fœtid dropping; from whence it is in some languages called *druiper*, *tripper*, &c.

After the venereal gonorrhœa was become known, it became usual among the physicians to call these light evils just now mentioned, a simple gonorrhœa, to distinguish it from the venereal contagion. Such a simple gonorrhœa is observed to be caused *ab inasuetâ potatione cerevisiæ, equitatione nimia, immoderato usu Veneris, etiam puræ, clystere calidius admissio*,* “by an unaccustomed drinking of beer, by much riding, by immoderate venery, though pure, or by a glisten given more warm than usual.” I have seen the like to have been occasioned by the use of more acrid diuretics, the application of cantharides, though but external, &c. But all these either spontaneously cease, or are cured in a short time, which cannot in any manner be affirmed to be the case in the venereal gonorrhœa.

Those who have contended that the antiquity of the Lues Venerea is to be demonstrated from that part of holy writ, have urged, that this flux of the seed must have been a contagion, as so much ceremony and caution were prescribed for the cleansing from it. But no body believes, at this day, that the venereal contagion is to be communicated to a sound body by touching an infected person in bed, or sitting or lying where he did. The uncleanness, under the Mosaical law, has nothing in common with any

G 3

contagion

* Astruc de morb. vener. lib. III. cap. i. sect. iv. p. 162.

contagion whatsoever; for in the same place * a man was legally unclean from whom *vir, de quo egreditur semen coitus*, “the seed of coition or copulation goes forth,” and a woman in her menstrua; which if any one had touched in bed, &c. he would be equally unclean. Besides, in simple gonorrheas, especially in those from whom the seed flows unwillingly and unknowingly, without any sense of enjoyment, they become debilitated and all enervated; on the contrary, they are, in the venereal gonorrhea, molested with frequent erections of the penis; from whence the cure of it is as often retarded, as will be said hereafter.

It is certain, that the venereal gonorrhea was not known in the beginning, whilst the Lues Venerea began to work its way into Europe; and we see that the first authors who wrote of the Lues Venerea have made no mention of the gonorrhea. *Antonius Musa Brasavolus* * wrote a treatise of the French disease, in the year 1551, where he has the following observation: *A viginti annis citra, aliæ quædam species ortum habuere, quæ an declinantem morbum sequantur, an aliquo modo immutatum sit genus, ambigendum esset*: “In about twenty years another species of this disease appeared; but it may be doubted whether it followed a declining disease, or whether the disease might have been only changed to some other manner or species.” But he describes five changes of the Lues: the falling of the hair and teeth, casting of the nails, the loss of eyes, and finally the gonorrhea. *Nam Gallicus affectus ex gonorrhæa incipit, & postea pilorum depluvium sequitur; quandoque incipit a gonorrhæa, & in gonorrhoeam finit. Nam nihil aliud illam sequitur, quam quod ipsa perseverat; neque facile evinci potest; sed necessarium est, si sedari debeat, generosis uti præsidiiis, de quibus postea verba faciemus*: “For the Gallicus morbus begins with the gonorrhea, and afterwards follows the shedding or casting of
“ the

* Levit. cap. xv. ver. 16. 19.

† Aphrodis. p. 659.

“ the hair, sometimes begins with the gonorrhea and
 “ finishes with the same ; for nothing more than its
 “ perseverance follows, nor can it be easily over-
 “ come ; but it is necessary to use some generous
 “ helps, more of which hereafter.”

In this author it particularly deserves to be remarked, that he already had doubted whether it was not a declining Lues, which had been followed by the first furious gonorrhea ; and he also remarked, that the contagion begun from a venereal gonorrhea, and ended in the same, the matter being expelled by this flux of the distemper. We observe the gonorrhea, in the infected in our times, which, if properly cured, will free the rest of the body from the Lues ; nor will any of these evils follow which are accustomed to accompany the spreading evil through the whole body. From whence, it is not without reason believed, that by a gonorrhea, treated in a skilful manner, the person infected will be altogether freed from a venereal contagion, which is to be yet treated of, whilst the cure of the Lues will be spoken of : but where the gonorrhea is neglected, or treated by a perverse method ; or whilst the patients, with unbridled lust, contract the same evil by repetition, and impure venery, the Lues will follow. The gonorrhea, according to this author, first appeared about the year 1531, and it seems to have been so frequent in the time of *Bernard Tomitanus* *, that he had said, *Quotusquisque est, qui Lue Gallica inficiatur auspicio gonorrhææ ? Profecto, qui hoc tempore laboret citra hoc seminis profluvium, vix unus aut alter exstat :*
 “ How many are there infected with the Lues Gallica
 “ beginning with a gonorrhea ? Truly there is scarce-
 “ ly a man but now labours under this profluvium
 “ of the seed.” This author was famous for his skill in physic, in the year 1531. It is likely that he exercised that art, at least, until the year 1538, when he
 G 4 began

* Aphrodisiac. p. 1053.
 tom. II. p. 765. & seq.

† Astruc de Lue Venerea,

began to teach logic, being elected into the order of professors: he followed this undertaking until the year 1563, when he took leave of the professorship, and betook himself entirely to curing the sick. Nor does it appear in that time in which he taught, that he ceased the exercise of physic, or the medical art; for in a preface which he fixed to two books of the Gallic disease, he says, * *cum differendi rationem & magistram, invito animo potius, quam infelicitè, tractaverim, nihil tamen, aut naturæ meæ rationi magis consentaneum, aut dignitati meæ opportunius, fore arbitrabar, quam quod mihi dabatur otii, post ipsam explicandi rationem, in medicæ artis exercitatione consumere*: “ Whilst I was teaching the art of disputation, “ rather with an unwilling mind than without success, “ I was of opinion, that nothing could be more “ agreeable to my natural disposition, or more becoming my rank, than to employ what leisure time “ I had, after the exercise of my professorship, in “ the study and practice of physic.” From hence, when he had laid down the office of professor, having some leisure, *medicæ suæ exercitationis aliquod specimen præbere voluit, &c. Ac primum illud, quod mihi* (inquit) *ob oculos versabatur, fuit de Lue Gallica pertractatio*: “ he was desirous to give some specimen of his medical exertions, and because the morbus Gallicus was constantly under his observation, he “ published a treatise upon it.” If we consider this, we shall find that the first mention of the gonorrhea occurs about that time which *Brasavolus* has mentioned.

But it is likewise true, that in his first chapter of the second book, he has the following words: † *Temporis autem lapsu, usque ad nostram ætatem, quæ morbi centesimum annum fere, aut circiter, explere videtur, &c.* “ But in the course of time, an hundred years “ of which seems to be passed, since the introduction “ of this disease;” which is not agreeable to the
chro-

* Aphrodisiac. p. 1015.

† Ibidem, 1053.

chronology of the venereal disease ; for *Bernardinus Tomitanus* died in Padua, 1576, of the plague,* in the seventieth year of his age ; so that he was not living when the age was first attacked by the Lues. This physician's history therefore shows, that he wrote these two books of the French disease, not long after the year 1563. From hence it appears, that some error crept into his numerical figures, which the celebrated Astruc * also confesses to have suspected.

But *Tomitanus* testifies, *prima contagionis semina exstare in præsentia, bubones, cariem, verrucas, & Gonorrhæam* : “ that the first seeds of the contagion “ disclosed themselves in his time in buboes, caries, “ warts, and gonorrhea.” It is to be remarked, that the caries, so called here, means not that of the bones, which is preceded by cruel pains of the osteocopium, which were far more rare whilst the disease was wont to begin from the gonorrhea ; but by a caries, those little ulcers which corrode the pudenda is to be understood, as that very author † clearly explains ; and as *Fallopianus*'s testimony in determining the epoch of the venereal gonorrhea may appear more doubtful, ‡ the celebrated Astruc believed, || that that treatise of the French distemper, was written in the year 1560, or 1561, since he there says, that fifteen years had not then elapsed, since the Gallic gonorrhea was observed by him to have had its epoch, which coincides with the year 1545 ; but he in another place § remarks, that some authors of great fame had disagreed among themselves concerning the birth and day of *Fallopianus*'s death. Besides, he informs us, that *Fallopianus* had published nothing else besides his anatomical observations ; for all the rest of those writings which bear his

* Astruc de Lue Vener. tom. II. p. 766.

† Aphrodisiac. p. 1052. ‡ Ibidem, p. 780.

§ De Lue Vener. lib. i. cap. xiii. tom. I. p. 99.

§ Tom. II. p. 746, 747. Ibidem.

his name, are posthumous, and published by his pupils; as any one of them had collected them from his master, as he was teaching, and not dictating them, and then disposed them according to their own genius, and gave them forth again in their own words. From whence, notwithstanding that treatise was wrote in the year 1560, or 1561, yet it does not appear in what year Fallopius had laid those circumstances relative to the epoch of the gonorrhea before his pupils.

Astruc* indefatigable in rummaging those authors, who wrote of the Lues Venerea, found a description of the gonorrhea, in a certain author named *James Bethencourt*, who published a book concerning the Lues in Paris, anno 1527. Of this gonorrhea which seems to him to be the first of all, the author, expresses himself thus: *Consuluit me quidam juvenis, cujus mentula sesqui annum perpetuo saniosum ac virulentum vomebat succum; quod Venereo contraxerat certamine. Usus fuerat frustra multorum Medicorum ac Chirurgorum consilio, &c. Cum mentula dolorosè arrigeretur, de ulcere suspicatus sum; consului, caveret ab injectionibus; tum, ne phlegmone proritaretur, tum, quod, si seminariis ulcus latitaret vasis, in mentulæ utroque latere dispensatis, tales inutiles penitus essent medicamentis desiccatoriis convaluit.* “ A
 “ certain young man consulted me, whose mentula,
 “ during half a year, continually discharged a vi-
 “ rulent corrupt matter, which he had contracted in
 “ a venereal embrace: he in vain had the opinions
 “ and advices of many physicians and surgeons, &c.
 “ As the mentula was attended with great pain in
 “ its erection, I was suspicious of an ulcer; I there-
 “ fore advised him to beware of injections, lest that a
 “ swelling or inflammation of the blood might be
 “ then provoked by them; for, if the ulcer should
 “ lurk in the seminal vessels disposed on either side
 “ of the mentula, they would be totally useless. . . .
 “ he

* Astruc, de Lue Vener. lib. i. cap. xiii. tom. II. p. 637, & seq.

“ he grew better by drying medicines.” This author wrote thirty years after the Lues appeared in Europe ; so that, according to his testimony, the venereal gonorrhea appeared sooner than those authors just now quoted had supposed it.

But as this symptom is so annoying and conspicuous, it could not escape the observation of those authors who wrote concerning the Lues, and yet made no mention of the gonorrhea : from whence it may be concluded, that the gonorrhea came to be known after the Lues ; although the time in which it was first observed, cannot be exactly determined, as it perhaps was various in different parts of the world.

It now follows, that something concerning the gonorrhea, and the various places it occupies, be mentioned, which indicate more or less difficulty of cure, to a skilful physician, as the penis is affected by the gonorrhea in all its parts. That a better knowledge may be had of those places, so wonderfully fabricated, let it be mentioned, that the penis consists of two bodies, call'd cavernous or cellular ; which are two flexible tubes, abounding with ligaments, laterally applied to each other, for the greatest part of its length. These tubes are not open, but are closed in their extreme part ; they are obtusely conical, have round apices, their own extremities, which are called the radices of the cavernous bodies of the penis, recede mutually from one another ; their size is there diminished, and finished in two apices, which are fixed to the margins of the os ischii, and the os pubis ; they approach toward one another at the junction of the os pubis, and unite themselves. The membrane composing those cylindrical tubes is elastic, and full of ligaments : the cavity of those tubes is fill'd with a cellular substance, so firm, that it seems to be a continuation of those involving membranes ; all the little cells have a communication with one another ; they are always more or less full
of

92 The VENEREAL DISEASE. Sect. 1447.
of blood, and may be compared to the cells of the spleen.

Where these two tubes fill'd with this cellular substance, mutually touch each other sideways, the transverse fibres of one are united to the transverse fibres of the other, so that they form a certain enclosure, in which the fibres still mutually recede, and make little openings, by which the communication between the two cavernous bodies is maintained; so that by a blast forced into one of these, the other immediately fills also. That enclosure is very much diminished around the obtuse apices, which are the *capita corporum spongiosorum* of the penis. Whilst these two cylindrical tubes lie laterally to each other, the upper and under space remain free; in this lower space, which is greater than the upper one, the urethra is placed along the whole length of the *corpora cavernosa* of the penis, lying mutually upon both. The urethra, together with these two spongy bodies just now described, constitute the penis, and is the chief seat of the gonorrhea; so that it ought to be well known, that this disease may be truly understood.*

The urethra occupying the lower part of the penis, is placed in a furrow, which is formed by the sides of the two cavernous bodies of the penis, lying alongside of one another, and strongly adheres to them, the whole length of the furrow, along which the urethra runs. But although the urethra is composed of a double membrane, and the cavernous substance be placed between these two membranes, such as is found in the *cavernosa corpora* of the penis, yet it differs from them; because it is less in size, and makes an open channel to the bladder, through which the urine and seed issue, as the *corpora cavernosa* of the penis resemble tubes, but such as through which nothing passes, and are both closed at their obtuse apices.

From

* Winslow *Exposit. Anatom.* p. 565, & seq.

From whence the penis consists of three bodies, besides its common integuments, which are properly called cavernous or cellular bodies, which are the two greater corpora cavernosa of the penis, and the third, which is likewise cavernous or cellular, but is smaller and perforated. The formation of the penis cannot be more perfectly demonstrated, than if the two greater cellular bodies, being distended by inflation, and likewise the cavernous body of the urethra, the penis be then dried, for the cells becoming stiff after being dried, will not collapse again, but remain distended, although the air will freely go forth into the *taleolas*, if the penis be dissected. The celebrated *Ruyschius* * first demonstrated the wonderful fabric of the human penis, by this method of inflating it, and clearly express'd it by figures or draughts; where he, in the dissected taleola's of the inflated penis, evidently demonstrates, how the urethra runs, in the inferior part of the penis, under the corpora cavernosa of the penis lying together: the same author proves, from the testimonies of the most skilful anatomists, who wrote before him, that they were ignorant of the true form or fabrick of the penis, urethra, and glans; but those bodies, which at this day are commonly called the corpora cavernosa, were by him called the nervio-*spongiosa*.

All the blood being first exhausted, he attempted to fill the vessels of the penis, by an injection of a composition of wax; but the cells of the penis being so filled, he could see nothing distinctly; therefore he exhausted the blood from the penis, and washing it with water by the help of a funnel, he fill'd it again with air by inflation, tied it very tight, and then dried it. But that the formation of the glans of the penis may be rightly understood, it is to be remarked, that the urethra, after it arrives to the extremities or heads of the cellular bodies of the

* Observat. Anatom. Chirurg. no. 100. p. 93. & seq.

the penis, forms the glans of the penis, together with the corpus cavernosum; for that cavernous body of the urethra is placed between its two membranes, is very thick between the prostate glans, and the meeting of the corpora cavernosa, afterwards more thin, grows thick again; towards the foremost parts of the penis, it is bent towards the outside, and leaves the mouth of the urethra open in the glans, then forms the exterior spongy superficies of the glans, and is terminated in a fringe at the junction of the prepuce :* from whence the glans of the penis is, as it were, an elongated substance of the urethra, reflected towards the outside, and covering the heads of the corpora cavernosa of the penis, adheres to them; and the membrane, which covers the external superficies of the glans, is a continuation of the membrane which invests the internal superficies of the urethra; under which the cavernous body of the urethra proceeding forward, continues a like substance through the glans, whilst the external membrane of the urethra, being turned back, together with these, covers the heads of the corpora cavernosa of the penis, and so in like manner hinders all communication between the two corpora cavernosa of the penis, and the cellular body of the urethra.

Ruischius † wondered at this, whilst he enquired into the structure of the glans, the cellular bodies of the penis being previously inflated, *ea enim inflatione intumuit & induruit quidem interior glandis pars, flaccida tamen mansit glandis pars exterior*; “ for an
 “ interior part of the glans swelled, and grew hard
 “ by that inflation, yet the exterior part of the glans
 “ remained flabby.”

Nor was that a wonder, for the corpora cavernosa of the penis being inflated, he felt the heads of them swelling, on which heads the glans, being not inflated,

* Herm. Boerh. Institut. Med. §. 654.

† In loco modo citato. p. 95.

flated, rested altogether soft and flabby: from whence he believed, that the interior parts only of the glans were swelled. He expresses this matter ingeniously in delineating the penis, with the two corpora cavernosa only inflated, the glans being left out, and no mention made of its swelling, either in its length or breadth.

But whilst *Ruischius* || inflated the cavernous body of the urethra only, the exterior part of the glans swelled, but not the interior, which remained flabby; and he afterwards inflated the corpora cavernosa of the penis, and then the penis being dried and dissected, he delineated carefully those excellent figures, which so clearly demonstrate the structure of the penis; among these there are two § which shew how the spongy body of the urethra, together with the two membranes of the urethra, by which it is confined, which constitute the glans, being bent backwards, lodge on the corpora cavernosa of the penis. Besides, he has distinguished the interval, which is interposed between the apex of the corpus cavernosum of the penis and glans, which is placed upon it by a broader line than is in the external margin of the dissected glans: for in this interval, the membrane surrounding the corpus cavernosum of the penis is contiguous, and grows to the external membrane of the urethra; from whence the thickness of it is more considerable. From these circumstances, it is understood why *Ruischius* * has said, *Reperi penis, glandem nil aliud esse, quam veram continuati- onem tam corporis nerveo spongiosi majoris et crassioris maximam penis partem constituentis minoris et tenuioris urethræ maximam et presertim inferiorem ejus partem ambientis sine ulla substantiæ mutatione*: “ that he “ found the glans to be nothing else but a true “ continuation both of the thicker and greater ner- “ veo-spongiosum body, which constitutes the great- “ est

|| Ibidem, p. 75.

§ Ibidem, fig. 81, 82.

* Ibidem, 95.

“ est part of the penis, and likewise of the smaller
 “ and thinner of the urethra, which surrounds the
 “ greater, and particularly the lower part of it,
 “ without any change of substance.” But it manifestly appears from his figures, that the glans of the penis, properly speaking, is a continuation of the cavernous body of the urethra, and is totally separated from the cavernous substance of the penis. It also appears, that *Graafius* † had erred, in supposing the spongy part of the urethra gradually approaching the glans, to be more and more attenuated, and at length to be obliterated in the glans; for the contrary is true, the cavernous body of the urethra, in the extremity of the glans, is greatest, and thickest, and forms ‡ the whole exterior part of the glans.

The figure of the glans is like a cone which finishes in a round apex, its lower convexity is almost a plane, but the base is obliquely placed; its circumference very little exceeds the cellular bodies of the penis, on which it is seated; the channel of the urethra advances directly forward, not through the middle of the glans, but by the inferior part of it, which is more level, and terminates in an oblong orifice, which is like a fissure, and narrower than the cavity of the urethra, which almost meets together, where it is terminated in that orifice ||.

I should not so long have dwelled upon the description of these parts, if I did not believe, that it was altogether necessary for the understanding of the nature of the gonorrhea, and many more evils that accompany it, or follow it; especially if they have been neglected or treated by unskilful persons, &c. It therefore remains, to consider those parts which are placed in the whole course of the urethra, from the bladder, to which it is almost continued to its orifice in the glans of the penis, and after-

† In loco modo citato, p. 96. ‡ Ibidem, fig. 81, 82.

|| Winslow *Exposit. Anatom.* p. 567, & seq.

afterwards what remarkable occurs in the cavity of this channel, which serve to gain a knowledge of the gonorrhea and its cure.

Where the urethra begins from the neck of the bladder, it is a simple membranous channel, and hath not as yet acquired a cavernous body; that channel is sustained in this place by a whitish thick-ness, somewhat firm and in figure like a chefnut, and is placed between the bladder and the bulb of the urethra, (more of which presently). This mass was called *prostatæ*, thus in the plural number, because it appears distinguished as it were into two lobes, by the middle running from the base of this mass which is toward the bladder, unto the apex which is next the bulb of the urethra. The first part of the urethra is placed in this furrow, and is as it were pressed down; but that channel of the urethra adheres strongly to the *prostatæ*.

The urethra then goes on, and about the distance of a finger and a half's breadth from its origin, a spongy substance meets this channel, like the *corpora cavernosa* of the penis, but more slender, and then it furrounds the urethra, and accompanies it in its whole course. That spongy substance does not immediately furround the channel of the urethra, but first forms an oblong body, which is called the *bulb* of the urethra.

There occur many more things worthy of notice in the cavity of the channel of the urethra; for in that part of the urethra which is immersed in the substance of the *prostatæ*, there is an oval eminence, thicker toward the posterior, smaller towards the anterior parts, and ending in an apex. This eminence is called *Caruncula*, *Caput Gallinaginis*, *Veru montanum*, and is generally pierced by two little holes in it's thickest part, sometimes by one, and seldom by three: these are the orifices of the conduits or pipes by which the seminal vessels sift or strain the seed into the cavity of the urethra: be-

sides there are in the same place, on either side of the thickest part of the same *Caruncula*, four, five, or six little holes disposed in the form of a crescent, or half moon, which are the excretory ducts of the *prostatæ*, which pour out a moisture secreted * from these glands into the cavity of the urethra.

The internal membrane of the urethra is somewhat slender and full of vessels it is pierced with a quantity of oblong holes, some greater, some less, chiefly about the glans of the penis: these holes are continued into the excretory canals of the glans, which are placed in the cavernous body of the urethra. These excretory conduits or ducts of these glands, run along the internal membrane of the urethra, through the cavernous substance, and then they obliquely penetrate the cavity of the urethra, which they cover with a soft mucose humour, secreted from them, and defend that sensible membrane from the acrimony of the urine, and preserve it flexible, and lubricate it. But as these conduits are obliquely opened in the urethra; hence their orifices are of the shape of a half moon.* The celebrated Morgagni || hath shewn these glands in the dissected urethra, but there are some of them more remarkable than the rest; two such are found near the beginning of the spongy body of the urethra, and these have excretory ducts rather long, but each of them is of an oblong plane figure, and about the size of the stone of a cherry: proceeding towards the anterior parts, a third gland, like unto the former ones, is found; these glands were called *Cowperiana*, from COWPER, that famous anatomist who discovered and described them, † and compared them in magnitude to a French bean: he said, they were flattened and of an oval figure, and yellowish like the *prostatæ*; they are seated upon both sides above the

* Winslow *Exposit. Anatom.* p. 567, & seq. § *Ibid.* p. 569.

|| *Adversar. Anatom.* i. tab. iv. fig. 4.

† *Drake Anthropol.* lib. i. cap. xviii. p. 115.

the bulbus of the urethra ; and their excretory ducts run for about half an inch along the convex superficies of the internal membrane of the urethra : they afterwards are more slender, and obliquely penetrate into the cavity of the urethra, by two distinct orifices, in that place where the urethra is inflected, under the os pubis in perineum. In the neighbouring glandular places is situated a third such gland, of less bulk than the former, near the anus, and opening into the cavity of the urethra by two orifices, distant about three tenths of an inch from the former ones. That this gland may appear, the cellular body of the urethra must be cut to the internal membrane of the urethra, lengthwise.* There are figures in the place above cited, which elucidate the description of these glands.

These considerations being premised, those symptoms which are observed to happen in a gonorrhea, will be more easily understood, and which are various according as the venereal virus adheres to various parts of the penis, and by corroding causes an ulcer. Let us suppose that the glans of the penis is affected † by such an ulcer after impure venery ; the glans is composed, as hath been said, of the elongated spongy body of the urethra, which is turned back above the two spongy bodies of the penis, terminated at the corona of the glans, and forms the guard of this gland ; therefore the gland is composed of the same structure as the body of the urethra ; from whence being fill'd by an effusion of blood from the arteries into the cells, and its return into the veins being prevented, it may be distended even unto bursting, which happens at the crisis of the venereal act ; from hence it is greatly inflamed at that time ; but the seed being emitted, the glans first grows flabby, and in that very instant of time, being very absorbent, easily conveys into

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* Drake Anthropol. lib. i. cap. xviii. p. 137, 138.

† Aphrodisiac. in Præfat.

its cells already emptied, whatever penetrating fluid is applied to that imbibing superficies. For, as the cells of the cavernous body of the urethra, by an effusion of blood by the arteries, and the return of which by the veins is obstructed, swell greatly at that time which nearly precedes the ejection of the seed, which being over, the effused blood presently returns by the veins now free, and the mouths of the absorbing veins easily deliver what they had received themselves, to the veins already empty. This peculiar structure of the veins in the penis, demonstrates an easy and expeditious resorption. For *Ruischius*, * the first amongst the anatomists, hath demonstrated, *Venæ per penem distributæ, si non omnes, saltem tot, quæ unquam offendit, sint poris magnis & visibilibus foraminibus pertusæ, cribri instar, &c. Ejusmodi Venarum perforatio in causa est, quod sanguis, per penem redux, citissime possit a pene regredi, fere momento flaccescente*, “ that the veins distributed through the penis, if not all, at least as many as he ever found, have been bored or pierced by great pores and visible apertures, as if it were a sieve, &c. This perforation of the veins is the cause that the blood returned by the penis can very soon be brought back, from the penis commonly growing flabby at that moment.” That there is an immediate intercourse between the cellulæ of the penis and the veins, is evident from hence, that if the corpora cavernosa of the penis are inflated, the veins which run along its back, are for the most part inflated likewise†: and he exhibited such a figure of an inflated and dried penis, as shows the apertures of the veins. *Ruischius* hath in another place ‡ demonstrated, that the motion of the blood through the penis is rapid; for he was called to a man, who had an ulcer that had eaten the artery between the glans and the prepuce, a violent hemorrhage following, rendered the wretch almost bloodless,

* Observat. 42. Anat. Chirurg. No. 100. p. 97.

† Ibidem, p. 96, & fig. 75. ‡ Observat. 42. Ibid. p. 41.

less, nor could it be staunched by various styptic remedies. *Ruischius* covered the glans with the prepuce, bound it thus down, and so relieved the patient from that danger.

Hence the reason is understood, why the contagion is so promptly absorbed in the beginning of the Lues Venerea, and why it infects the whole body in the space of a few days. The venereal contagion seems to be have been altogether moveable in the beginning of the Lues, and to be absorbed with facility; after many years it began as it were to grow milder, and it was wont to manifest itself first in that part whereby it was contracted, (see sect. 1442.) and then the gonorrhea had its rise, which, if regularly treated, preserved the body from the rest of the evils of the Lues Venerea, as will be afterwards shewn in the cure of it; for the venereal contagion is fixed in the place to where it is applied, and then multiplies not itself by dispersing so very soon through the rest of the body.

As the penis is most particularly exposed to the contagion in impure venery, it is easily understood why the contagion becomes so very frequent in that part; why that fungous part of the glans swells with ulcerous matter, which was described in the precedent paragraph, so as the press'd gland will exude it; why the ulcers bred in this spongy part still feeding upon all this body, and converting the whole glans into venereal corruption, will cause it to fall off from the remaining yard: and it is finally manifest, that the communication by the spongy urethra is maintained from the head of the penis even to the neck of the bladder, since it is all one continued cavernous body; and since the superficies of these cells is always invested by a fat oily humour, by which it is lubricated and expanded, it easily appears why this contagion once received, flourishes and expands itself so expeditiously.

tiously. * Moreover it appears from these circumstances, that, in respect to the diversity of the part to which the contagion adheres in this region, different symptoms or complaints will ensue, and some of them may be more easily, and others more difficultly cured, which we must consider.

It happens in impure venery, that a contaminated matter, absorbed by the dilated pores into the superficies of the glans inflated by the venereal œstrum when it begins to grow flaccid, the first moment it insinuates itself into the cells of the spongy body of the glans, which is continued between the two membranes of the urethra unto the neck of the bladder; but this communication causes the least contagion of the spreading evil to be easily propagated in all this part. But when it is here admitted to the more tender membranous fat, an ulcer suddenly breeds there, and collects a matter which has been already mentioned. This foetid ulcerous humour always forms itself there a furrow sufficiently large, in which matter is made, accumulated and retained, from whence it slowly goes forth, but yet plentifully. If the cavity of the fungous fabric of the glans is stopped, and the matter dilating itself forms on its superficies outlets by which to issue, then a most filthy moisture exsudes through that part, then corrupts and sometimes blasts the prepuce and the glans: this is called by Boerhaave the first species of the venereal gonorrhea.†

It is known by the foetid moisture, which is thinner than that in other disorders of this name; it is engendered in no small quantity, between the glans and the prepuce, or a matter exsuding through the glans when pressed, the contagion being taken away, the cure of this gonorrhea is not difficult; sometimes a red spot appears in the superficies of the glans; this of all others is the chief sign of having caught the contagion. This spot sometimes vanishes

* Aphrodisiac. in Præfatione.

† Ibidem.

nishes in a short time, and there afterwards follows an excretion of matter through the substance of the glans; sometimes that mark first degenerates into a morbid ulcer, and from that the infection advances to the fungous substance of the glans. Where such an ulcer is seated in the internal part of the prepuce, or in the glans, it discharges a similar and not inconsiderable quantity of matter, such as that which flows from the glans when press'd, and when its cellular fabric hath been infected.

But as the matter of the gonorrhea is more frequently accustomed to discharge itself through the urethra, so that some have called it a flux of the seed, as they might have believed this matter to have been a genital humour, but corrupted by the contagion of the Lues Venerea; hence where that matter pass'd forth through the substance of the glans, and nothing by the urethra, some have called it a gonorrhea, but a spurious one, in order to distinguish it from other kinds. We read † that a celebrated physician of Montpellier, named Maffon, had seen a peculiar species of a gonorrhea in three of his patients, in which the venereal *tabus* issued forth from the small glands surrounding the corona of the glans, and this disease was cured by the remedies usually applied to other gonorrheas. It is added, that the celebrated *Barbyrac*, and other physicians of Montpellier, had observed the same disease before; and as the celebrated *Littre* had described such glands § in this place, there was from thence a new argument deduced in support of the existence of those glands. The celebrated *Astruc* defends the same opinion * concerning the name and seat of the disease, and treats of it in that place where he speaks of the spurious gonorrhea, or concerning the venereal *stillicidium* from the glans.

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† Academ. des scienc. 1729. Hist. p. 16.

§ Ibidem l'an 1700. Hist. p. 39, & seq.

* De Morbis Vener. lib. iii. cap. iii. p. 190.

It has been shown, that there are in this part some small glands which exhale a poisonous odour, and cause a collection of filthy matter between the prepuce and the glans. But the venereal virus, as was before said, is easily entangled by tough and mucous humours, such as these glands discharge. It appears then very probable, that these glands are very often infected, and they in truth appear very apt for fixing the received contagion, and from thence venereal ulcers are bred; by which I have often seen the whole corona of the glans surrounded. But it does not seem certain, that the gonorrhea called the spurious, always owes its origin to these glands thus affected. Sydenham * gives the following account: *Ipse scilicet vidi, virulentam hujusmodi materiam per substantiam glandis porosam exsudare, non per urethram ejectam, nulloque ulcere vel glandem occupante, vel præputium:* “ Moreover I myself have
 “ seen a virulent matter of this kind to exsude
 “ through the porous substance of the glans, and
 “ not discharged through the urethra; neither
 “ was the glans or prepuce attacked by an ulcer.” And Vercellonus § affirms to have seen many more so affected, *qui albam saniem plorabant per substantiam glandis porosam, etiam citra ullum ulcus,* “ who discharged a white putrid matter through the porous
 “ substance of the glans, also without any ulcer.” I well remember to have often seen some drops of venereal corruption issue through the whole substance of the glans penis whilst it was press’d in such patients; though I could discover no complaint in either the prepuce, or in the border of the corona of the glans, where these smaller glands are laid.

Another species of gonorrhea is observed, † when the venereal virus, insinuating itself through the pores of the glans, penetrates into the cellular body
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* Epistola secunda Responsorio, page 414.

§ De Pudendor. Morbis cap. iii. page 86.

† Aphrodisiac. de Præfatione.

of the urethra which grows round it, and forms an ulcer there, which corrodes the openings and passages of the urethra. Hence it pours out an ulcerous matter, continually distilling from this passage, but chiefly when the yard is squeezed in that part, being forced or squeezed upwards from the lower part. If it is pressed upwards in the morning after sleep, before it is washed, at about a thumb's breadth from the top of the penis, a quantity of foetid matter is squeezed out; from whence it appears, that this matter adheres not in the urethra, but that it is forced by that pressing or squeezing from the corpus cavernosum of the urethra. In this species of the gonorrhea, no more of such matter will issue, if the whole penis be squeezed from the neck of the bladder to the glans; from whence it is concluded, that this place only is affected.

This is most frequently the case in the beginning of the gonorrhea, occurring every day, and producing a great quantity of venereal corruption for a long time, especially in men of a lax habit; and if the matter be freely secreted, though for a long time, it seldom produces the Lues, and in general is a preservative from it. It is more particularly dangerous in this respect, that the matter, adhering in the crooked turnings of the cellular membrane, may cause a continual dropping or running, scarcely to be cured by any art, especially if this disorder was neglected or badly treated in the beginning; for then the virus might have been propagated through the whole length of the cellular body of the *urethra*, even unto its *bulb*.

From hence, the place about the end of the urethra, which is dilated about the glans, and makes a kind of an oval little trench, and which is called *navicularis*,* is first affected.

But as the corpus cavernosum of the urethra, as hath been before said, being turned back, forms the
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* Winslow Expofit. Anatom. p. 569.

bulk of the glans of the penis in the lower part, where the urethra is thinner in substance, sometimes a hole is eaten which is hard to be cured, nay it remains sometimes incurable during life.

It was before said, that the channel of the urethra was pierced through all its length, by certain greater and lesser orifices ; by these also the contagion of the Lues may be very easily communicated, from which the gonorrhea follows. This Lues is usually composed of a more acrimonious, or of a more copious quantity of venereal poison, from an ardent and repeated impure venery, from former gonorrheas, from the use of venery whilst the gonorrhea is running, from the great heat of the air, from leaping, riding ; in all which, the venereal contagion is rendered more active and hurtful.

The patients feel a sensible pain in the penis, and if the urethra is squeezed, a greater quantity of matter flows out, but by a more slow dropping, on account that the urethra is more contracted ; by squeezing from the hinder part of the penis towards the glans, the matter may be pressed out, which does not happen in the upper part of the urethra ; when the seat of the evil sticks near the glans, a white humour issues, grows yellow when dry, and renders the linen stiff. If the evil is of a bad nature, this humour or matter grows green ; and the case is yet worse, if a matter full of corrupt blood, or bloody, flows out ; for then it is a sign, that the cellular fabric of the urethra is corroded, from whence a difficulty of cure is indicated : but this usually happens to those who are more frequently tormented with an erection of the yard, whilst they labour under the gonorrhea. The colour of the distilling matter is also changed in the like order ; whilst proper medicines are applied, the disorder grows better, the bloody and corrupt matter begins to grow green, and then yellow ; afterwards grows white, and diminishes in quantity.

It has been often observed, that the gonorrhea which is slowest in appearing, after a connection with an infected woman, is the worst; a troublesome stricture, as it were, is felt in the penis, which, whilst the urine is strained out, not only excites or causes pain, but still causes a feeling of some impediment. I have seen this the second or third day after the gonorrheal infection had declared itself; in others only in ten or twelve days after, and sometimes later.

The material cause of the gonorrhea seems to be a humour naturally flowing from the furrows of the urethra, and lubricating its internal superficies; that humour is but in small quantity in time of health. When the venereal contagion is entangled in it, then the secretion is increased, and a corroding acrimony is also collected, the secretion being increased by the fury of the contagion. If the virus is washed away before it can corrode that place to which it adhered, the evil is cured without ulceration; but if the virus hath been more acrid or copious, or lurked longer in a place, before it declared itself in a gonorrhea, an ulceration is to be feared.

Sharp * well remarks, that such an effusion may be produced, by an irritation only increasing a secretion of the natural humours, without an ulcer: thus a great quantity of humours in the intestines is separated by the stimulus of a cathartic, and expelled by the alvus: such an abundance of saliva is secreted by the smoking of tobacco, that the whole body falls sometimes into a consumption. The fluor albus in women bears great affinity to a filthy corrupt matter, and though a great quantity of it is discharged, there is no ulcer discovered. From men a far greater quantity of gonorrheal matter flows out, than may seem to be expected from a few little ulcers corroding the internal superficies of the urethra. This is farther proved in the female

* *Sharp's Critical enquiry of the present state of surgery*, p. 133, & seq.

female gonorrhea ; for this flux is sometimes very copious in women, and yet, by the most diligent search, no ulcer, or trace of an ulceration, is discovered in the *vagina*, which nevertheless ought to be the case, if that flux had been an ulcerous corruption.

In men, the interior parts of the urethra are hardly visible ; but in the dissected bodies of those who laboured under the gonorrhea, and have died of other diseases, were sometimes found the signs of inflammation, mucoſe, ſwelled furrows, and the emiſſaria oſcula ulcerated. Sometimes a great quantity of matter is alſo collected in theſe parts. So *Morando* * found in a young man of twenty years of age, who, dying of a ſlow fever, was, at his death, entirely emaciated by a conſumption, about the caput gallinaginis, a blackiſh tumour, from which he collected nine drachms of ſuch matter ; and whiſt he endeavours to prove that it is not ſeed that flows from the urethra in a gonorrhea, he tells us, that he put a little of that matter into the urethra of a dog, with this effect ; that a yellowiſh corruption perpetually flowed from the penis of that animal until it died ; but the dog died mad.

The celebrated *Morgagni*, † who diſſected many more virile urethras than perhaps any other anatomist, declares, that he ſeldom or never had perceived thoſe injuries in the urethra, which accompany a gonorrheal contagion. For that humour which firſt flows in the beginning of a gonorrhea is not purulent, at leaſt it is not real pus ; nor is it attended with ſo much pain as to indicate a corroding ulcer, nor as yet appears the leaſt drop of blood, or lighteſt tincture of it. From whence it ſeems to be confirmed, that that flux, in the beginning at leaſt, depends or ariſes from that increaſed quantity of natural mucoſe humour, by which the cavity of the urethra is wont

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* Prima Decade di Lettere Famigliari, p. 108, 109, 110.

† De ſedibus & cauſis Morbor. per Anat. detectis, tom. ii. p. 194, & ſeq.

to be covered. For in a young man about twenty-five years of age, who renewed an old gonorrhea by a fresh one, before six months were past, and that still continuing, he died with the hemorrhage from the wound; and examining diligently then his genital parts, † *in præputio, glande, urethra, nihil usquam ulcerum, erosionis, ruboris, nec quidpiam aliud, quod ad præsentem gonorrhoeam attineret, si madorem excipias, quam soleat, majorem, a media urethra ad glandem usque pertinentem. Ad gonorrhoeam autem illam veterem, diuturnamque, spectare hæc, credidit; primum, ab eo ferme loco, unde mador incipiebat, exstantem oblongam albidam lineam, ulteriora versus oblique tendentem, &c.*

“ he found in the præpuce, glans, and urethra, no
 “ ulcers, corrosion, redness, nor any thing else re-
 “ lative to the present gonorrhea, except a moisture
 “ which was greater than is usual, extending from the
 “ middle of the urethra unto the glans. But he be-
 “ lieved, that these circumstances had belonged to the
 “ old and long-continued gonorrhea, &c.” To this moisture of the urethra sometimes a redness is added; and it is no wonder, that this symptom was observed in this man, as he died of the hæmorrhage. But a very candid author § acknowledges, that he had often seen the traces or marks left in the urethra, from the antecedent corrosion, the filling up of the mucose furrows, scars in the urethra, the constriction of it, and the growth of luxuriant flesh in that seat of the furrows or lacunæ; nay, even in another body, † *tractus erat transversorum digitorum trium, aut eo amplius, quo proclive erat intelligere, urethram olim fuisse ulceratam. Per eam enim faciem, in qua illi erant canaliculi, tres quatuorve exstabant, in transversum ductæ, albidæ, & quasi tendineæ, chordulæ, vel potius institæ, non valde prominentes, nec usquam se ab interna membrana urethræ sejungentes:* “ there was a mark of
 “ three fingers breadth, or more, by which it easily
 “ was

† De sedibus & causis Morbor. per Anat. detectis tom. ii. p. 196.

§ Ibidem, p. 197.

† Ibidem, p. 198.

“ was to be understood, that the urethra was formerly ulcerated; for on that superficies in which these little channels were, three or four whitish strings, brought across as if they were tendons, or rather borders or laces, remained, not greatly standing forth, nor at all separated from the internal membrane of the urethra.”

From hence may be seen, that the dispute between authors who wrote concerning these diseases, may easily be terminated; for some of them would not allow, that an ulcer ever was known attending the gonorrhea, but that there was only a greater secretion and discharge of natural muci, by which the internal superficies of the urethra is lined. Some others said, that the matter flowing from the penis was filthy and corrupted; and from thence concluded, that a venereal ulcer attended every gonorrhea, especially when they saw that corroding ulcers were bred by the contagion of the Lues in other places of the body. The dissections of dead bodies have demonstrated, that the marks of ulcers are sometimes left, and appear after gonorrheas, and sometimes not.

Certainly a sound man seldom blows his nose in hot weather, though the internal membrane of the nostrils run with mucose bubbles; but if the distillation of the head into the nose begins to work, a great quantity of liquid flows from the nostrils; so that the nose must be continually wiped. But where the distillation of the head into the nose begins to ripen, as it is so termed, the humour comes thicker from the nostrils, most like unto digested corruption which passes about the end of a disease, though no ulcer at all had been in the cavities of the nostrils. Such matter is purged out by spittle, where the internal superficies of the lungs is affected in the same manner as the nostrils by the distillation of the head to the nose; and then a rheum or cold is said to follow, which brings on a troublesome cough. This is mitigated

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mitigated when the digested spittle is discharged, then perfect health follows, without any trace of an ulcer in the lungs.

From whence a celebrated author * hath stated this humour to be the same *qui in gonorrhœa rheuma verum supeditat, in quo virulenta Veneni materies hæret: unde & tunc dolor maximus in loco, ubi glans deficit; quo vero plures horum folliculorum inficiuntur, eo peior hic morbus; & contra; cumque, injecto liquore, communicare inter se demonstraverit Cocburnius, facile proserpit, ex uno in alium, malum:* “which plentifully gives the true humour in the gonorrheal rheum, in which humour a virulent poisonous matter is entangled; and from whence there is great pain in the place where the glans ends. The more these little purses or bladders are infected, the more violent this disorder is; on the other hand, as Cocburne has demonstrated, by an injected liquor, that they communicate with one another, and that the evil easily creeps from one to another of these folliculæ or bladders.”

Thus the reason is also understood, why the contagion of the Lues Venerea is not so frequently dispersed through the whole body; after the gonorrhea begins to manifest itself, then the virus adhering to the urethra, is entangled by a greater quantity of secreted mucose matter, and is washed away and expelled from the body; then there is a tumefaction and dilatation of those little bladders and neighbouring vessels, rather than a corroding of them; from whence the celebrated Morgagni, as hath been just now said, found a redness, and a greater moisture in the membrane of the urethra in dead bodies. And hence the reason is understood, why Botallus † has said, *Qui Venerei morbi principia parvi faciunt, juvantur mirum in modum seminis effluvio diuturno: nam paulatim, quod putidum erat conceptum, effluit cum cætero*

* Abrah. Kaau Perspirat. Hippoc. p. 124.

† Aphrodisiac. p. 872.

tero, quod nondum corruptum, sed incoctum, labitur:
 “ They who pay little regard to the beginning of a
 “ venereal disorder, are wonderfully helped by the
 “ continual flowing of the seed; for what was re-
 “ ceived putrid flows by degrees with the rest, which
 “ glides away, not as yet corrupted, but indigested.”

But as often as the virus enters into the glands of the urethra called *Cowperiana*, by their ducts, and attacks them, the matter discharges itself into the cavity of the urinary passage, and then it is said to be a gonorrhea of the third species.

These Cowperian glands, as they have been described in this section, lie on either side of the urethra, above its bulb and their excretory ducts, even within half an inch of the convex superficies of the membrane of the urethra; then they obliquely penetrate into its cavity, in that place where the urethra is bent under the ossa pubis in perinæo.

If the venereal virus has invaded these glands, and fixed its seat in them, it can be scarcely extricated from thence; but adhering and becoming worse by delay, there eats great hollows and fistulous cavities, flowing with this corruption, hard to be absterged, and also to be cured. This is chiefly to be feared, if the flowing forth of the collected matter in the glands into the cavity of the urethra be obstructed by any cause whatsoever, for then the worst of ulcers are sometimes generated at the sides of the urethra, and infect the neighbouring parts, and sometimes occupy the subcutaneous or cellular fat parts, or the hinder part of the penis, and become the worst of evils.*

This complaint oftner derives its origin from the first and second species of the gonorrhea, especially if the patient laboured under precedent disorders of this kind, many times repeated; without these it seldom happens: and the celebrated *Littre* †, who dissected

* Aphrodisiac. in Præfatione.

† Acad. des scienc. l'an 1711. Mem. p. 267, &c.

dissected a great number of dead bodies infected with the gonorrhea, only once had found the Cowperian glands alone affected. But in the place where the emissaria of these glands open into the cavity the urethra, there was a redness, of the breadth of four tenths of an inch, tending rather to the left than to the right part. There was a roundish ulcer nearly in the middle of that redness, equal to about half a tenth of an inch in diameter; it had eaten away a great part of the left orifice, and also a small portion of the neighbouring urethra. The gland answering to this orifice, was found red, hard, and swelled, the gland of the right side was less affected.

This species of gonorrhea is known by a tumour and pain in the middle of the perinæum, which is sometimes extended to the anus; nor does a great quantity of matter flow from the penis in this kind of gonorrhea; there is sometimes scarcely felt any scalding or heat of urine, if there is no soreness in the neighbouring part of the excretory ducts. It commonly happens, that in the very latter part of making urine, a quantity of corrupt filthy foetid matter goes forth from the penis; as also when the tumour in the perinæum is press'd by the hand, whilst the matter so collected sticks in these glands that ought to happen oftner, on account of their declivity and situation.

The celebrated Littre * gives a sufficient and easy prognostic of this gonorrhea, believing it may be cured without any great difficulty; yea far more easily than other kinds of gonorrhea; which may seem to be a wonder. But that wonder ceases, if it be considered, that that skilful famous man only acknowledged three seats of the gonorrhea; namely, these Cowperian glands, the prostatae, and seminal vessels; † for he makes no mention of the two former kinds of gonorrheas now spoken of; add to this,

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that

* Acad des scienc, l'an. 1711. Mem. p. 271.

† Ibidem, p. 263.

that he had scarcely ever treated this kind of gonorrhea; for he had but once seen it in a dead body which occasioned him to remember, that he formerly had such a patient under cure. He also acknowledges, that at that time, he had not yet sufficiently known the Cowperian glands; so that he was not so attentive to it as he might have been if such a disease had occurred to him again. If it had so happened, I doubt not but this famous man would have changed his opinion concerning the cure of this gonorrhea.* Yet this is true, that the infection of these glands is less to be feared than the same evil attack'd the prostatae, or the seminal vessels; of which three places only he seems to have treated.

It is to be remarked, that from the increased tumour of these glands, and their neighbouring parts, their excretory ducts may be so press'd or squeezed as to transmit little or no quantity of matter into the cavity of the urethra; then the authors call this "A virulent dry gonorrhea," or, "A dry venereal dysuria;"† which that celebrated author states to have been preceded by vehement, virulent gonorrheas, or to follow them when suppressed. But he lays down two causes of this complaint, viz. The phlegmone of the prostatae, or of the seminal vessels, and phlogosis erysipelatodæa of the urethra. He teaches, that in the first case, there is humour, heat, redness, and pain in the perinæum yet here is no mention made of the Cowperian glands being so affected, which seems a wonder; he elegantly expresses thus in another place:‡ *Experientia compertum est, Gonorrhæam quidem, quæ in vesiculis seminalibus tantum, aut prostatidis, sedem habuerit, rarius in abscessum degenerare; sive quod major firmiorque illarum moles dilacerationi, sine qua suppuratur,*

* Acad. des scienc. l'an 1711. Mem. p. 267.

† Astruc de Morbis Vener. lib. iii. cap. isi. p. 185,

‡ Ibidem, cap. iv. p. 197.

nulla fit, magis resistat ; sive quod multa, lata, brevia, emissaria, quæ ex illis partibus in urethram aperiuntur, liberiores viam hærenti & corrupto semini præbeant, unda minori efficacia concludentes cellulas debet erodere. Contra vero Gonorrhæam, in qua glandulæ Cowperianæ affectæ sunt, in abscessum frequentius abire, ratione contraria ; sive quod minor & mollior illarum moles facilius corrumpatur, sive quod semen inibi collectum (cum longo, obliquo, angusto, ductu in urethram effundatur) diutius in ipsis restitet, atque adeo ipsarum contexturam promptius pessundet : “ It has been found by experience, that
 “ a gonorrhea which had a seat only in the seminal
 “ vessels, or in the prostatae, most seldom dege-
 “ nerates into an abscess ; whether that their greater
 “ and firmer composition resists better the laceration
 “ of the parts, without which there can be no suppu-
 “ ration ; whether that the emissaria, which are
 “ opened from these parts into the urethra, being
 “ many, broad, and short, afford a clearer and
 “ fiercer passage to the corrupted seed, from
 “ whence it must corrode these concluding cells
 “ with less force ; but against the gonorrhea in which
 “ the Cowperian glands are affected, for a contrary
 “ reason, more frequently form an abscess ; whe-
 “ ther that their smaller and softer mass may be
 “ more easily corrupted ; whether that the seed
 “ there collected, and poured into the urethra, by a
 “ long oblique narrow conduit, remains there lon-
 “ ger, and so more readily destroys their texture.”

From whence it may be inferred, that the Cowperian glands, infected by a venereal miasma, may produce a dry gonorrhea, so called. But these glands being affected, the mucus is not secreted by them at all, or cannot be discharged into them, unless very sparingly ; the urine is discharged with unusual pain, which will be yet greater, if the neighbouring part of the urethra is inflamed, as it is often observed to be ; and the ichor distilling from the ducts of those
 glands,

glands, degenerates into a corroding acrimony, which is sometimes so great, that it almost destroys these glands: so *Morando* * found in the body of a man who had suffered by many gonorrheas, the last of which had continued above a year, that only two unequal and very small fragments of these glands had remained, which resembled a callous contracted skin. The celebrated *Morgagni* † found in the body of a young man, the right duct of the Cowperian glands more small than in a natural state, but the left more thick, distended by a mucose humour; but he found the emissary of the duct very narrow, being swelled on account of the difficulty of the passage: he also found the whole gland of this side swollen, which appeared small and skinny on the right side.

A fourth species of the gonorrhea follows. ‡ Whilst the poisonous corruption is conveyed into the prostatae, it corrupts them, and dissolves them into an abundance of poisonous corruption; which evil is chiefly bred from gonorrheas continuing during a long time, or often repeated: it is known by the tumor in the perinæum near to the anus there, whilst the Cowperian glands are infected; and likewise by interception of urine, by the discharge of a quantity of filthy putrid matter, caused by an almost incurable suppuration; oftentimes by a malignant ulcer bred in the perinæum, and not to be cured; sometimes by the worst of ulcers in all the parts about the prostatae, and forming a shocking appearance by feeding upon their neighbouring parts; but the urine is intercepted suddenly, in this case most particularly, and without a manifest cause: from whence arises a most dreadful tenesmus in attempting to discharge it, but the attempt is to no purpose, neither is it possible to introduce the catheter;

* Prima Decade di Lettere famigliari, p. 109.

† De sedibus & causis morbor. per Anat. tom. II. p. 198.

‡ Aphrodisiac. in Præfatione.

thetar; the patients being thus a long time tormented, until a filthy matter is discharged suddenly into the urethra; neither is it long before the same complaint attacks them again; and I have sometimes seen it happen, that the urethra being broken or eaten round the region of the prostatae, discharged urine into the cellular coat of the perinæum, scrotum, and neighbouring parts, which becoming in time more acrid, corroded the skin in many places, and the urine passed through all these holes, whilst the patient tried to make water, and then but a small quantity of urine went forth through the extremity of the urethra. I first saw such a filthy phenomenon in a youth, to whom a great quantity of turpentine had been given, together with astringent injections, pressed into the penis by the force of a strong syringe, being the sixth gonorrhea under which he laboured for ten months, which an impudent empiric attempted to cure. When he attempted to urinate he fouled all the neighbouring parts, through a number of little holes in the scrotum: that this wretch might be more at liberty with harlots, he thieved many things, for which he was hanged. It was granted to the prayers of his honourable family, that his body should not be brought into the anatomical theatre, but should be buried. It would have been worth while to examine the effects of such a foul disease in the dead body. *Morgagni** confirms, by his own observations and those of many others, that the prostatae are sometimes most severely affected, especially in repeated or inveterate gonorrheas. But although a great difficulty of cure appears from what has been said, yet *circa prostates, miram, cicatricum ex ulceribus antiquis, inveteratis, tunc persanatis, faciem conspicuam fuisse*; “wonderful scars, “from ancient ulcers then a long while cured, are “often conspicuous about the the prostatae of dead

* De sed. & causis morb. per. Anat. detectis, tom. II. p. 199. & seq.

“ bodies ;” † from these scars it appears, that this kind of gonorrhea can be cured, though not without great difficulty. It seems that *Sydenham* * believed, that the prostatae were not infected in the beginning of a gonorrhea, but later : *Tandem, inquit, altius penetrans, glandulas Prostatas efferato ulcere solet depascere ; quod haud raro cernitur in eorum cadaveribus, quos hic morbus e medio sustulit :* “ At length,” says he, “ the ulcer being rendered more fierce, is wont to feed on the prostatae, as it more deeply penetrates the glands, which is not infrequently observed in the bodies of those which have been cut off by this disorder.” Cockburn § defends the same opinion, and proved by many arguments, that neither the prostatae, nor the seminal vessels, afford the first asylum to the gonorrhea ; but as the force of the contagion sometimes spreads itself every where through the neighbouring parts, so that the prostatae and seminal vessels may be infected, or corrupted in the progress of the gonorrhea, as he confesses. ‡ But he treats of these more at large in another place. ||

Finally, the last and most abominable kind of gonorrhea, is that which by an infection of the prostatae, corrodes the emissaria of the seminal vessels, opening amongst the passages of the prostatae, and communicates its poison through these conduits into the seminal vessels, contaminating the vessels and liquid contained in them, and creating a large and foetid discharge, whilst it in the mean time ulcerates all the interior parts, which turn or wind as a labyrinth. If it be considered, that the prostatae lie upon the intestine rectum, which is every where surrounded with a copious quantity of fat, it is easily understood, that the whole cellular apparatus, which in some parts lies between, and in others surrounds

† Ibidem, p. 200.

* Epist. 11. responsoria, p. 414.

§ De virulenta Gonorrhea, p. 24.

‡ Ibidem, p. 23, 24.

|| Ibidem, p. 30—35.

rounds, the spermatic vessels, the urinal bladder, the intestine rectum, the perinæum thus ulcerated, putrified, and corroded, produces fistulous openings at the scrotum, perinæum, and anus ; so that through these fistulas, all these parts are consumed ; then neither baths, fomentations, injections, plasters, ointments, pultices, incision or dilatations, are of any use : but the urine will be at length discharged by or through these ulcers.*

The celebrated *Boerhaave* with grief saw many of these calamities ; and I have been an eye-witness sometimes of such like, which chiefly attend often-repeated inveterate gonorrheas, treated unskilfully. I have trembled when dissolute and daring young men indulging themselves with diabolical prostitutes, and in unbridled sensuality, laughed at a gonorrhea, as if it was but a light evil, and hardly worthy of the name of a disease. I have seen such a youth, who having laid by all shame, and delighted in dating the events of his life from the times on which he had his various gonorrheas, greatly abuse those who dared to doubt the fidelity of his memory, as he recited the time and place of his actions, whilst he swore that this or that had happened in the time of his third or fourth, &c. gonorrhea. This wretch having lost his testicles, and his genitals, his thighs were eaten away in a most horrid manner, and he was placed in the open air, for nobody would receive him into a house, he stunk so intolerably ; and thus he most miserably perished.

Though the celebrated *Morgagni* † doubted not that the contagion in the infected glands and prostaticæ, could reach to the feminal vessels ; yet he did not directly see these parts to have been affected, in carcases which had laboured with the gonorrhea when he dissected them ; but he believed to have observed an instance of this matter in the body of a young man

* Aphrodisiac. In Præfatione.

† De sed. & caus. morbor. per Anat. detect. tom. II. p. 201.

of twenty-five years of age, who had coupled an old virulent gonorrhea with another fresh one, about six months before he perished of a violent death; for he found the feminal bladders skinny and dry, though they are usually found plump and full of juice at that age: he also very judiciously says, if seed of a bloody foetid nature, defiled by filth and corruption, be expelled through the delusions of venereal dreams, by any one labouring under a long and cruel gonorrhea; it is not yet to be concluded, that the feminal vessels are infected: *potuerunt enim aliquando purulentæ & fœtidæ sordes, & cruoris aliquid, a transeunte, sano alioquin, semine abripi, atque averri, ex ulceribus, quæ urethram, prostatam glandulam, & seminalem carunculam, occuparent. Ab his enim ultimis ipsis ulceribus non semper necesse est vitium cum Vesiculis communicari, tametsi non difficile communicari posse, diximus:* “ for the corrupted foetid filth
 “ and mixture of blood, may be carried away by
 “ the seed flowing out, though sound, and be swept
 “ away from the ulcers which may occupy the ure-
 “ thra, the prostate glands, and seminal carunculæ;
 “ for the malignity is not always necessarily com-
 “ municated from these last ulcers to the feminal
 “ bladders; yet we have said that they may be com-
 “ municated without difficulty.”

Such is the gonorrhea in men, which fixes its seat in divers places, begets various disorders, and sometimes the most dreadful evils in the unwary, which are hard to be cured; as hath been demonstrated by what has been before said. But though the patient may have recovered, and all the venereal contagion be expelled from the body, yet sometimes the fabric of the parts remains so changed after a virulent gonorrhea; especially if it has been frequently repeated, that the work of generation is disturbed or destroyed for ever after. *De La Peyronie*, to whom the art of surgery is so much indebted,* hath described such a case;

* *Mem. de l'Acad. Royale de Chirurg. tom. I. p. 425. & suiv.*

case ; A man thirty years of age, whose wife had been delivered of three children in the space of four years, was infected by a gonorrhea, for which being obliged to take many journies, he neglected it: he was treated by empirics for two years, but without success. The chief symptoms of this disease were, the suppressions and ardent heat of urine, a copious running, sometimes green and sometimes yellow, but ofteneft mixt with corrupted blood ; the running was suppressed by riding, from whence the right testicle was greatly swelled ; proper medicines being at last applied, this complaint was cured in four months, and he lived two years with his wife, who had been so fruitful, as he was accustomed to do before, but she did not conceive. Yet as he was solicitous about this matter, he consulted *De La Peyronie*, telling him, that he ejected not his seed in the time of coition with impetuosity, but that it was retained ; then when the erection was over, a froth pass'd out, and in a greater quantity if the penis or the urethra was press'd, whose channel was free from all impediment, as a full stream of urine passed forth from it ; otherwise he was very sound. He died of an acute disease in about five or six years after. The urethra being dissected in the dead body, a scar appeared in that part of the veru-montanum which is next the bladder ; this, in wrinkling this place, had so changed the direction of the orifices casting out seed, that they tended not towards the glans of the penis, but towards the right side of the neck of the bladder : to be more certain of this matter, an injection into the seminal vessels was tried through the vasa deferentia ; the vessels being filled, the injected liquor driven out by the ejecting vessels, dashed against the right side of the neck of the bladder ; whilst, in a sound state, it ought to be driven forward towards the end of the urethra, and freely go forth.

It plainly appears, that such an impediment of fertility could hardly be known until after death; and if it had been known in life, how could it be cured?

Many more examples cited in the same place teach, that impediments had remained after gonorrhœas, and that they render the free casting forth of the seed difficult.

Yet there is one symptom which hath been observed in the gonorrhœa, and deserves great attention, namely, a venereal ophtalmia; which, if not quickly assisted, brings on an incurable blindness. *Erudtelius** testifies, that he had found this ophtalmia, which may be called venereal, more than once; so that in those suffering with a gonorrhœa from impure venery, to whom balsams and strong astringents are applied, the gonorrhœa being suppressed, a sudden metastasis happens to the eyes, which, together with a sharp inflammation brought on the whole bulbus of the eye, forms a transparent substance upon the cornea, which if not speedily taken away by a surgical incision, suddenly hastens into a suppuration, and by piercing that horny substance, the humours being already disturbed and infected within, it prepares an entire way for the discharge of all those humours, *Solet tunc prius quidem per vulnusculum illud materia Gonorrhœæ prorsus similis excerni. Monet autem, nihil, hic juvare Venæ sectiones, nihi Purgationes, nihil Mercurialium & Panacearum de cantatarum usum internum; nisi enim carnosâ illa, ac ferinæ indolis, excrescentia auferatur primis, statim atque apparet, diebus, perforatio sequitur corneæ, humorumque effusio, sine ulla visum recuperandi spe.* “ At
 “ first a matter like that of the gonorrhœa is usually
 “ purged forward through that little wound.” But he here advises to help it with nothing, “ no section
 “ of a vein, no purgations, no internal use of mer-
 “ curials, nor of the panaceas so much spoken of;
 “ for,

* *Warsavia Physice Illustrat. cap. vi. p. 123.*

“ for, unless that fleshy growth of a terrible nature
 “ be taken away immediately, within a few days af-
 “ ter it appears the cornea is pierced, and an ef-
 “ fusion of the humours follows, without any hope
 “ of recovering the sight.” Nobody will wonder at
 this who considers how much mischief is done by the
 venereal miasma, in the hardest parts of a body,
 and how they are corroded by it; how much more
 is it to be feared on account of the tender organ of
 sight, whilst it is afflicted by a metastasis of morbid
 matter! From hence it appears, that the retained
 and absorbed matter of the gonorrhea is sometimes
 deposited in other parts of the body, or that the
 universal Lues dispersed through the whole body,
 may be bred from the bad cure of a gonorrhea, and
 the absorbed virus is sometimes first deposited in
 particular parts of the body, before it is dispersed
 through the whole body; so by astringent injections
 applied for the cure of the gonorrhea, buboes, and
 a hardness of the testicles follow; of which more
 hereafter: these parts are indeed more near to that
 place which had been first affected; but *Storchi* *
 hath observed, *Gonorrhoea per adstringentia suppressa,*
exulceratum fuisse umbilicum, & eandem ibi prodiisse
materiem, quæ antea per urethram exstillaverat, “ that
 “ the navel was ulcerated, when the gonorrhea was
 “ suppress’d by astringent remedies, and that there
 “ went forth the same matter which was before di-
 “ stilled through the urethra.”

These observations of the celebrated Astruc con-
 firm such a metastasis at the eyes: he says, *se ob-*
servatione compertum habere, Ophthalmiam Gonorrhai-
cam, in summo etiam incremento, dicto citius remissam
fuisse, vel evanuisse derepente, redintegrato Gonorrhææ
fluxu, vel erumpente bubone Venereo in inguinum
alterutro. He adds, *quibus oculi natura molles*
sunt,

* Anno Medico secundo page 221.

† De Morbis Vener. lib. iii. capit. iii. edit. 2. tom. I. p. 291.

sunt, aut infirmi, aut infirmi, aut quibus, ictu, aut affricu, aut festucæ elapsu fortuito, male habent.

“ that he also found out the Gonorrheal Ophtalmia, even at its height, to have been quickly mitigated, or to have vanished, by a renewal of the running of the gonorrhea, or breaking of a venereal buboe in either groin.” He says, that this metastasis from the genitals to the eyes occurs in those whose eyes are naturally weak or infirm, or in those who had them injured by a blow, or by rubbing, or the accidental fall of a mote into them.”

In the mean time it seems not improbable, that the venereal ophtalmia is sometimes bred not by metastasis, but from the contagion immediately applied to the eyes. It is known to all who had these disorders to cure, that those labouring under the gonorrhea, are often accustomed to squeeze the matter collected in the urethra from the penis in the day-time, that they might explore its nature, colour, thickness, quantity, and so judge of the cure; nor will they abstain from this examination, though they are informed that these frequent squeezings of the penis are hurtful, in irritating the place, the affected part. This is chiefly done by those who by hearsay or experience, have learned that the disease grows mild, when the flowing matter becomes thicker and white; from whence it is sometimes tried betwixt the fore-finger and thumb, whether of a ropy kind or not; then neglecting to wash or wipe the fingers before they rubbed against the eyes, or in the nostrils, there's great danger of contracting the venereal ozaena, and such an ophtalmia, as it is easy to apprehend.

That by one touch only of the gonorrheal matter the eyes may be inflamed, is proved by an uncommon but certain observation: * A certain young man

* De Morbis Vener. lib. iii. capit. iii. edit. 2. tom. I. p. 295. & in prima edit. p. 192.

man was accustomed for a long time every morning to wipe or wash his eyes in hot urine, that he might strengthen the sight of his eyes; he abstained not from this washing after he had contracted a most virulent gonorrhea, not fearing any mischief from thence: presently a venereal ophtalmia followed, with an acrid involuntary flood of tears from the eyes, which were likewise bloodshot: but these evils were at length perfectly cured by the same remedies by which the gonorrhea was.

Astruc justly remarks, that such an ophtalmia is less severe from an external application of the contagion, whilst the gonorrhea flows in the mean time; than if the gonorrhea was suppress'd; for a more impetuous virus would rush into the eyes, and in a greater quantity.

But as the *tunica adnata* which is also called *conjunctiva*, though it seems to be slender, consists of numberless cells, separated, and yet pervious by one another; these little cells being inflamed, stuffed, and swelled, surround the pellucid cornea, which appears surrounded by such a tumour on every side, whilst the rising ambitus almost resembles red flesh, and forms an ugly spectacle, especially if the internal superficies of the eye-lids, contiguous to the bulb of the eye, is in like manner affected; which may easily happen as the adnata tunica invests the internal superficies of the eye-lids.

If such an ophtalmia should have had its rise from a poison externally applied, or from the suppression of a more benign gonorrhea, it will be more gentle, and may be cured by common remedies. If, on the contrary, it was caused by a sudden suppression of a very virulent gonorrhea, it threatens a danger of blindness. A celebrated author* had seen two young men blinded of both eyes by such an ophtalmia, so that a careful application of all remedies was in vain. Nor is the force of mercury itself to be trusted to,

* De Morbis Vener. lib. iii. capit. iii. p. 293.

to, for though a great dose be given, the sudden impetuosity of that disorder anticipates the efficacy, for the eye is lost before the mercury exerts its power.

The prognostic signs of such an ophtalmia depend chiefly on the knowledge of its cause, namely, the suppression of the running gonorrhea; for I have often seen that tumour of the *tunica adnata* in ophtalmias, of which a suppressed gonorrhea was in no manner the cause, and also the cornea appear as almost buried. The cure first used in this case is, baths and fomentations, prepared from the most emollient remedies, applied perpetually to the penis and its neighbouring parts, by which the running or flux, which had ceased, will again be renewed; whilst moderately strengthening fomentations are at the same time applied to the eyes, which v: g: are of *acetum Lithargyrii* diluted by a hundred times its quantity of water. Let those remedies, so praised for curing an inflammation, in sect. 395, be also briskly applied; for as the venereal contagion is acrid and corroding, inflammations of the worst consequences (see Sect. 388.) are to be feared.

It is first to be observed, that the *tunica adnata* or the *membrana conjunctiva* so called, adheres to the tunica albuginea, which springs from the tendons and muscles of the eye, and that the cellular texture is interposed, and that this inflammatory tumour sticks in these cells, whilst the more tender vessels and the cells are filled with intruded thick blood, deprived of the more liquid part, (vide Sect. 382. 2.) But the tunica adnata is thin, and, together with the translucent tunica albuginea placed underneath, constitutes the white of the eye, as it is called; the adnata is all full of little vessels, so as the greatest part of these only contain humours, yet thinner than red blood: whence the whole will appear white in the more young; these vessels are easily dilated,
and

and then they also admit a thicker fluid. If a sound man rubs his eyes, the adnata presently grows red; the same happens if a little sand, a drop of wine or vinegar should stick between the eye-lid and the ball of the eye, for then the eye-lids are strained with great force, and they press red blood into these little vessels easily giving way to it; from whence the whole white of the eye is deeply coloured with red. But this adnata, so full of vessels covers the pellucid cornea, from which it may be separated by the point of a pen-knife; and moreover consists of exceeding minute or slender vessels in this place, which, together with the contained liquid, may transmit the rays of light: if therefore the vessels of the adnata, where it covers the cornea, by a violent inflammation are filled with thick humours, the clearness of the cornea is destroyed, which is partly or entirely darkened.

So after a violent inflammation of the eyes, some white opaque spots are bred in the cornea or horny substance, and then the arterial vessel appears red, which (the eyes being also not guarded) is easy to be seen, because it tends from the tunica adnata, where it covers the albuginea to the limbus or border of the cornea, climbs above it and terminates in the center of such macula: all who have treated the disorders of the eyes attentively, must have often seen these phenomena; the same hath been manifestly confirmed by anatomical injections made of coloured materials. Whilst some oculists considered this, they cut such a red vessel full of arteries, which directly tended to such a spot, before it pass'd over the limbus of the cornea; for by this means they endeavoured to prevent or to take care that the thicker humours, could not come to the spot of the cornea. In one or two such swelling vessels by chance this may be tried by a skilful hand, but the dark spot of the cornea remains, although the vessel
be

be cut : and Astruc acknowledges this, * saying, *porro tamen quantacumque sit operationis virtus, et efficacia, potest illa quidem presenti noxæ mederi, & imminenti occurrere, ac vero nequaquam potest jam contractam tollere, vel corrigere* : “ Yet surely how great
 “ soever the virtue and efficacy of this operation
 “ may be, it may indeed cure the present mischief,
 “ and prevent what threatens, but it can in no man-
 “ ner take away or corrupt that which is already
 “ contracted :” hence he advises, that this is to be the more speedily tried, as it is the only remaining method of cure. *Voluit scilicet circularem tumentis conjunctivæ ambitum ex toto exscindere, & exstirpare, ne qua compressionis causa superesset, unde oculus male haberet* : † “ He would moreover cut away and ex-
 “ tirpate the circular ambitus entirely of this swell-
 “ ling, lest any compression should occur from
 “ whence the eye might be injured. He describes the manner in which such an operation ought to be attempted, viz. let the whole circular ambitus nearest the sclerotids be torn away by the end of the forceps ; but, if the interior side of the eye-lids be seized with such a tumour, *summis forcipibus pariter detondenda est, & deglubenda* ; “ it is in like manner to be
 “ pulled off and peeled by the forceps.” But it is well known how sensible, how irritable, the internal superficies of the eyelids is, and, if what was said in the general history of wounds, (Sect. 158. No. 5.) be considered, viz. that the lips of the wound afterwards begin to harden, swell, grow painful, and torment, together with a light fever and heat attending ; which evils then only begin to be diminished, when the corruption is formed ; I believe that it plainly appears, that an augmentation of this dangerous inflammation is to be feared from such a section, made in a part inflamed, and by the forceps, which more or less bruises the lips of the wound in
 cutting

* De Morbis Vener. lib. III. cap. vii. p. 293.

† Ibidem, p. 294.

cutting; neither can such a wound, which is equal to the whole circumference of the cornea, be called small or insignificant, and it will be still far greater, if the internal superficies of the eye-lids be cut in like manner: what will become of this cornea, or at least of its extreme lamella, which is a continuation of the tunica adnata, as hath been said, if the vessels being cut in all the ambitus, it be entirely deprived of the influx of these vital humours? These are reasons why I should never advise this operation. I was once present when such a circular section of the adnata was attempted, for the cure of an ophthalmia of long standing; some persons admired the dexterity of the operator, but I lamented the bad effect of the operation: yet there was no gonorrhea, to whose suppression the origin of this complaint could be attributed; so that the cause of the evil was still the lighter.

In the fluor albus.] Women are infected with a similar disease to this in men, affected by impure coition; and they in like manner labour under a foetid venereal flowing corruption: but a diversity occurs in the symptoms, on account of the different structure of their parts. The vagina of an infected woman surrounds the penis every where, it is rubbed and agitated, together with the seed it receives the corruption of the gonorrhea, which afterwards slowly glides away; hence it is no wonder, that this part is frequently infected, and afterwards disfigured by venereal ulcers; but as the sebaceous glands,* already mentioned, are most numerous in the alæ, nymphæ, and in the lips of the pudenda, and round the orifice of the urinal passage, are found more caverns or furrows than in the vagina, which is naturally moistened by a lubricating humour; there are in all these parts fit places, there is a mucose humour

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* Perspir. dict. Hippocr. cap. xiii. p. 124. Morgagn. Advers. Anat. tab. 3.

ready, in which the venereal virus may be entangled, and produce such-like evils in other parts of the body.

The gonorrheal tabus or corruption, ejected with the seed from an infected man in coition, touches the superior part of the vagina, where the mouth of the womb receives it: this upper part of the vagina is smooth, here is no wrinkle; so that the infection rarely comes to that place, on account of the smoothness of the surface, and because the liquid, which is cast into the vagina spontaneously, descends from it. At about a third part of the length of the vagina from the upper end, there appears half-round membranes or wrinkles within the vagina, which are greater and more numerous, all the way down the vagina, till it as it were meets. In these wrinkles are placed nervous papillæ, the instruments of sensuality and likewise little mucous folliculæ or bladders.

It has been observed, that ulcers have been produced in the vagina from impure venery, to the length of three or four fingers breadth; they are broad in the under part, and narrow in the upper and thence resemble wounds made as it were by a fissure; the course of such wounds is in a direction perpendicular to the wrinkles of the vagina. These ulcers emit a corrupted, thin, corroding, malignant matter, by which men who lie with such infected women, are most speedily infected.

As long as the evil adheres to the vagina, especially if of a more mild nature, it is not infrequently taken for the fluor albus; which, as it frequently occurs, such women sometimes do not suspect themselves to have been infected, especially if they before had laboured under the small fluor albus.

But it seems that the gonorrhea in women can be distinguished from the fluor albus, by a knowledge of the cause, viz. of suspected venery, which cause they are for the most part accustomed to conceal: besides, the fluor albus for some months, nay
year

years, gradually increases from a light beginning, and is, but in some length of time, rendered acrid, yellow, and sometimes greenish; at length a gonorrhea suddenly springs up, continually increases, and thus hastening its steps increases the evil. The colour, which in the beginning is white, sometimes soon changes into yellow and green; and the vessels being corroded, a mixture of blood and corruption flows; then the vagina suffers with heat and pain: but if the fluor albus has been inveterate, a greater quantity of matter flows than is observed to flow in a gonorrhea. †

It also appears, that if the cause of the evil adheres to the vagina, the women attacked by the gonorrhea, can be free from the difficulty of urine, that attends the gonorrhea in men; from whence it is concluded, that the gonorrhea in women is easier to be suffered, cæteris paribus, than in men.*

This female gonorrhea, depending on the infected cavity of the vagina only, may, for distinction sake, be called the first species.

From the orifice of the urethra in women, under the clitoris, placed in the interval of the nymphæ, resembling a little swelling, wrinkled, and bored by many little ducts, may be pressed a viscous or mucose humour. These mucose furrows may, by themselves, or together with the vagina, be infected by impure venery. *Graafius* ‡ held this place only for the seat of the female gonorrhea, and to distinguish it from the fluor albus, he would have the genitals be inspected. *Siquidem meatus urinarii exitum circumstantes partes (in quibus lacunarum exitus terminantur) mucosa quadam materie obsessas, ac interdum exulceratas, reperies, utero ejusque vagina innoxias, corpus glandosum, sive prostates urethræ circumpositas, solum male affectas fuisse.* “ If any of the parts

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“ fur-

† Astruc *Malad. des femmes*, tom. II. p. 228.

* Astruc *de Morbis Vener.* lib. iii. cap. i. p. 167.

‡ *De Mulierum organis.* cap. ix. p. 140, 141.

“surrounding the exit of the urinal passage (in which the exits of the furrow are terminated) be found attacked with a certain mucose matter, and sometimes ulcerated;” as he hath seen this evil in the dead body of an infected woman: “the womb and the vagina being unhurt, the glandular body, or the prostatae placed around the urethra only were affected.” That species of a female gonorrhea occurs when that glandular body, in the middle of which the orifice of the urethra is placed, swells, grows painful, and distils a venereal corruption, either spontaneously or when it is pressed. The muscle which *Santorini* * describes, and which he terms the depressor of the urethra, being irritated, is erected, and makes all this glandular body prominent; from whence arises a difficulty of making water; yet there is not a pain or scalding always felt, whilst the urine flows; but when the affected place, being ulcerated, is irritated by the flowing of the urine, the women feel a grievous pain, and a tension in emitting urine, complaining as if something had fallen out from the vulva, or at least attempted to do so. But since this part communicates with its neighbouring cellular part, it is to be feared lest the virus should be propagated to the mount of venus, as it is called, which hath a thicker membrana adiposa, a most apt seat for retaining the contagion, and for propagating the filthy ulcers bred in this place. It is likewise to be feared, that the urethra may be corroded by a neighbouring ulcer of the glandular body; and then follows the most loathsome flux of urine, to the exterior and superior places of the vulva.

This evil may be called the second species of the female gonorrhea.

The female urethra, arising from the bladder or the neck of it, is scarcely longer than the breadth of a thumb, in a curved course, is turned a little upwards,

* Observat. Anatom. cap. xi. p. 208.

wards, and then proceeds outwards, and opens under the clitoris. The channel of the urethra is spongy, like that in a man, but much shorter; it runs between the trunk of the clitoris and the vagina, and adheres to them both. In the internal superficies such-like little ducts are found, from which a viscous humour is pressed; from whence if the urethra be infected by a venereal contagion, there is formed a third species of the female gonorrhea, which produces such-like evils as have been recited in the history of the gonorrhea in men: the like matter flows, attended with a painful stranguary, and from a corrosion in the urethra it is to be feared that the urine may pass through the vagina.

In the lips of the female sinus on both sides, at the under part almost, under the sphincter of the vagina, is placed a great gland equal to a great pea; and each of these glands has a remarkable emissary or opening, from which a quantity of viscous liquid can be pressed, and is believed to go forth spontaneously in the time of the venereal œstrum. The celebrated Morgagni * delineated the spreading orifices of these glands, and hath shewn in a draught one such gland separated from the rest of the parts. Santorini † delineated also one of these glands, which stood towards the outside of the lower part of the vagina; *Casparo Bartholino* likewise delineated the prostatae. It is plain, that the venereal miasma may be spontaneously received by the wide orifices of these glands. This evil is wont to begin with a troublesome itching, which is followed by a tumour and pain of the part; the quantity of flowing moisture, resembling the gonorrheal corruption is increased; such tumour being sometimes one, and sometimes two, appear in the interfoemineum, and are distinguished from buboes, with which they are sometimes confounded. All the evils said to have at-

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tended

* Adversar. Anatom. tom. i. tab. iii. * * & litera H.

† Observat. Anatom. tab. ii. fig. 1. f.

tended the Cowperian glands in the gonorrhea in men, are here to be feared in like manner; for, unless such a tumour can be brought to the outside, or that the venereal corruption be freely evacuated by the little ducts into the vagina, all the neighbouring parts are corroded, and the worst of sinuous ulcers are bred; the vagina and neighbouring *intestine rectum* are so corroded, that the fæces go forth through the vagina: the most profligate prostitutes are accustomed to reproach one another for this most filthy evil, whilst they are under cure in hospitals.

This may be called the fourth species of the female gonorrhea.

But the vagina is the place most frequently affected in these gonorrheas: this evil is observed in the urethra itself, and in the ambit of its orifice, as hath been said; and as that which is injected into the female sinus, by a man infected with the gonorrhea, spontaneously descends towards the inferior part of the vagina, where the little ducts of the glands, just now described, open, they seem to be fully exposed to that venereal infection.

It is justly doubted, whether the gonorrhea more deeply penetrates the womb, or infects the Fallopian tubes, or the ovaria: it seems possible that the Lues, when dispersed throughout the whole body may infect these parts, but it is not made out, as far as I know, that the gonorrhea had penetrated unto the womb, and there excited such an evil. Yet it is true that some celebrated anatomists had found some *quasdam vesiculas, varia magnitudine, omnes vero subrotundas, aut ovaes, internam prope totam cervicis faciem confertis agminibus obtinentes* ;* “ little vessels
 “ in the neck of the womb: these were all different
 “ in magnitude, but roundish or oval, so close as to
 “ occupy almost the whole internal part of the
 “ neck.” These they have delineated in a dissected
 womb.

* Morgagni Advers. Anat. i. p. 44.

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womb. † Different authors would turn these little vessels to various uses : some said they were the Hydatides ; others the Ova in women ; others stated, that this fabric of these vessels digested a viscous humour, by which the mouth of the pregnant womb was shut up. The celebrated Morgagni could always press a quantity of tough mucose matter from these vessels ; but as it has been often before said, the mucose, fat, viscous matter is very apt by its glewish nature to entangle the miasma, so as to fix it in a particular part of the body ; this is frequently seen, namely, in the neck of the womb where the same ought to happen. Santorini,* who accurately described these vessels, and delineated them, ‡ denied *Hydatides esse, neque novas fœminei seminis scatebras, aut novum muliebri cervici datum ovarium ;*——*Ne vero id præteream, quod a Clariss. Morgagno, harum partium, ut & cæterarum, scrutatori accuratissimo, adnotatum fuit, vix unquam quidquam vitii in iisdem me deprehendisse, licet putidissima scorta, cæteris alioqui partibus corrupta, dissecuissem :* “ that the Hydatides are new springs of the female seed, or a new ovarium given to the female cervix of the bladder.” He then adds the following ; “ but that I should not pass by what has been noted by the celebrated Morgagni and other accurate scrutators of these and the rest of these parts, I have scarcely ever found out any defect in them, though I have dissected a most foetid harlot otherwise corrupted in her other parts.” Some observations on the ulcerated tubes of the womb, are read in Morgagni ; || yet the doubt seems to remain, whether the gonorrhea has been propagated so far, or whether the virus really had, from the first infected mass of humours, been deposited by a metastasis in these places.

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† Morgagni Advers. Anat. i. p. 44. tab. iii. L. L.

* Observat. Anatom. cap. xi. §. 9. p. 213, & seq.

‡ Ibidem, tab. iii. fig. lit. B.

|| De sedibus & causis Morbor. &c. tom. ii. p. 369.

It fully appears, that the gonorrhea is, *cæteris paribus*, easier to be borne by women than men; for they may be attacked with this disorder, and still have no hurt in the urethra; whilst the fomes of the disorder adheres in the loculi of the vagina; in them there is no dysuria from hence, or it is by far milder than in men, though even the female urethra had been affected; for it is by far shorter and less incurvated. Besides, women are hardly liable to the attendant evils of the gonorrhea, the phymosis, paraphymosis, cicatrices of the urethra, caruncula, &c. *

Yet these evils are more difficult to be cured in them, because they easily neglect the light discharge which remains after a gonorrhea badly cured, because most women are accustomed to have the vulva and the vagina perpetually humid; but as they then scarcely feel any pain, they despise all medicines: on the contrary, men are more docile, and fear yet worse evils, as long as the least or unaccustomed matter flows from the penis. A celebrated author, † where he describes the prognostics of the Lues Venerea, breaks forth in these words; *Cætero, quod Gonorrhœam muliebrem, hanc jam dudum immedicabilem statuimus*: “that the female gonorrhea of a long standing, is judged by us to be incurable;” in those women who are of a lax constitution, and those parts commonly discharging some moisture, some dropping humidity, may remain a long while, though the whole venereal virus had been already subdued; but that discharge will be white and mucose, and no more infectious. This matter will be afterwards treated of in sect. 1459, where the cure of the gonorrhea is set forth.

* Astruc de morb. Vener. lib. iii. cap. i. p. 167.

† Vercellonus de Pudendor. morb. & Lue Ven. cap. iv. p. 227.

S E C T. MCCCCXLVIII.

TH E contagion being communicated through the lymphatic absorbent vessels, the inguinal glands swell then to venereal buboes in either sex.

The groin is called bubones in Greek, and the tumours of the glands in the groins, are known by the same name, (see Sect. 416.) The tumours of other glands dispersed through the rest of the body, are in like manner called buboes. Custom has since caused the tumours bred under the arm-pits, and in the groin, to be particularly distinguished by this name: they are frequently observed in the Lues Venerea, and as the groin was formerly taken for the emunctorium of the liver, from the buboes an argument was raised to prove, that the first infection in the Lues attacked the liver, and was afterwards driven, by the force of this intestine, to various parts of the body; concerning which these things said in Sect. 1445. may be seen: from whence *Fallopious** said, *Hepar, infectum Gallico, tentat emissionem ad propria emunctoria. Si materia crassa, transfundit ad inguina; si tenuis, ad colem; aliquando ad dextrum, aliquando ad sinistrum, aliquando ad utrumque, latus, aliquando in media pube. Ego tres vidi bubones, indicantes maximas vires expultrices, & materiae infectae copiam*: “ The liver, infected by the French disease, “ attempts a discharge of humours towards its particular emunctoria or cleansing channels; if the “ matter is thick, it transfers it to the groin; if “ thin, to the yard; sometimes to the right, sometimes to the left side, sometimes to both, and “ sometimes to the middle of the pubes. I have “ seen

* Aphrodisiac, p. 820.

“ seen three buboes indicating very strong expellent
 “ force, and a quantity of infected matter.”

These buboes usually occupy one or both sides of the groin, the pubes but seldom; a bubo in the pubes never fell under my inspection, and, I believe that numbers of other physicians and surgeons had never seen one: I do not intend to call *Fallopious's* observation upon this matter in question. It sometimes happens, that the buboes acquire a considerable bigness, and if one such arises in either groin, the expanded mass of such tumours may become contiguous, so as to occupy the intermediate tubes. *Fallopious* himself observes,* *Quoties glandula talis intumuerit, ita magnus fit tumor, ut excedat magnitudinem panis unius solidi*: “ As often as such a gland
 “ swells, so as that the tumour becomes great,
 “ and exceeds the magnitude of a small loaf of
 “ bread.”

He observes very justly,† *Natura bujus tumoris est, ut statim incipiat erumpere tumor, qui duum est generum: aliquando colligitur materia circa glandes in membrana vestiente glandulas, vel replente cavitatem inguinum; aliquando substantia propria glandulæ intumescit*: “ The nature of this tumour, which is of
 “ two kinds, is to break out immediately; some-
 “ times there is matter collected about the glands
 “ in the membrane that unfolds them, or fills the
 “ cavity of the groins; sometimes the very sub-
 “ stance of the gland itself swells.” It is certain that the inguinal glands are sufficiently involved and covered by the *tunica cellulosa*, which likewise suffers itself to be distended in all its circumference; from whence it is to be dreaded, that the buboes will be larger if the venereal virus has also infected the *membrana cellulosa*, than if it had fixed its seat in the gland only; which kind of buboe puzzles the physicians, because it never comes to maturity or suppuration. *E contra illius, qui est extra glandes, pri-*
mum

* Aphrodisiac. p. 820.

† Ibidem.

num signum est parvitas; secundum, celeris mutatio; tertio, cognoscimus ad tactum, tumorem esse in membranis, & non esse aliquod corpus circumscriptum, quod intumeat: “On the other hand, a small appearance is the first sign of that which is beyond the gland; the second is its quick change; the third is that we know by feeling that the tumour is in the membranes, and that it is no other circumscripted body which is swelled.” It plainly appears, that a tenuity of the tumour is rather to be expected from the affected gland, than from the swelling *membrana adiposa*.

I have often and carefully observed buboes at their rise. The patients begin to complain of a certain tension in the groin, sometimes of a dull obtuse pain; then I could feel the glands as yet but a little increased, yet distinct, and placed or ranged lengthwise along the groin: they are soon increased in bulk, and unite almost into one mass, which afterwards often rises into a great tumour; and then it seems that the glands do not alone constitute this tumour, but that the *membrana cellulosa* is also infected: besides, this seems to be confirmed by practical observations. Buboes of a large size are happily, and sometimes soon diminished by the power of mercury; but though they partly disappear, there remains as it were a hard glossy kernel, which yields to that power with great difficulty, and sometimes changes into an incorrigible hard *schirrus* or swelling.

See these matters already mentioned in Sect. 1337, where the suppuration of the breasts, and likewise the diversity of cure are treated of, according as the irremediable inflammation is seated in the cellular part, the glandular, or in both parts of the breasts at once.

*Bubo aut statim apparet, antequam aliud malum in corpore cernatur, aut postquam ulcuscula penis Chirur-
gorum curiositate nimis propere sanata sunt, aut post-
quam*

quam Gonorrhœa intempestive suppressa est * “ A buboe
 “ either immediately appears before any other evil
 “ may be discerned in the body, or after some ul-
 “ cers in the penis are too soon healed, through
 “ great eagerness of the surgeons, or after an un-
 “ seasonable suppression of a gonorrhœa. *Alexander*
Monro demonstrates †, that the vasculous lymphatic
 vessels absorb the fluids by their mouths, in many
 places of the body ; he also remarks, that many con-
 globated glands receive some certain branches of
 those veins in themselves. It therefore will not seem
 wonderful, that the venereal poison strikes into these
 absorbent vessels, whilst young men are in the em-
 braces of filthy harlots ; and being conveyed to these
 conglobated glands, together with the lymph venosa,
 spreads the infection through them. It is like-
 wise to be feared, if the virus had formed an ulcer
 in the penis, or had produced a gonorrhœa in the
 urethra, and sufficient care be not taken that the
 contagious virus be discharged from these places
 by perpetual lotion, or a copious flux, being ab-
 sorbed by these glands, will easily adhere and raise
 them into a tumour. It seems probable that these
 glands are infected before the rest, which are more
 near to the place first affected. Thus buboes are
 formed from the infected pudenda by venery ; nurses
 who suckle infected children are likewise so infected ;
 among the first signs of the contagion, tumours
 often manifest themselves under the arm-pits. In
 infants to whom the contagion is communicated by
 infected nurses, the glands of the neck are often first
 invaded.

This is farther confirmed by those circumstances,
 which are observed to happen in the inoculation
 of the small-pox. A slight incision is made in the
 arm, to which a thread infected with the pocky mat-
 ter

* Alex. Trajan. Petron. de Morbo Gallico lib. vii. cap. v.
 Aphrodisiac. p. 1325.

† De Venis Lymphat. Valvul. p. 46, & seq.

ter is applied; tumours then gather under the arm-pits: from whence many skilful physicians conclude, that this inoculation had not been instituted in vain; for it is a sign that the poison of the small-pox is absorbed. But as the inoculation is only now made in one arm, and not in both as formerly, the axillary glands of that same side, are only accustomed to swell †.

From hence it appears, that a buboe in the groin gives a signal of the contagion's reception in the veins; and if the whole is fixed in that tumour, the patient may still be as yet free from the disease: but that is altogether uncertain; for part of the virus only might have fixed here, and the rest of it, being mixed with the mass of humours, may infect the whole body; from hence we learn why these buboes are to be always suspected by the skilful. From whence Sydenham ‡ has, after treating of the gonorrhea, subjoined the following opinion: *At vero, quoties morbi diuturnitate, & in dictis partibus mora, contagium sursum fertur, & sensim sanguini labem imprimit, aut materia virulenta, indebito adstringentium usu, in corpore retenta est, putrescunt humores, vera Lues exoritur, in qua tumores, sive bubones, sæpe in inguine comparentes, primum ejus gradum constituunt*: “ But
 “ as often as the contagion, by a long continuance
 “ of the disease, and a delay in the parts mentioned,
 “ is carried into the upper parts of the body, and
 “ gradually contaminates the blood; or when a poi-
 “ sonous matter is retained in the body, by the
 “ wrong use of astringents, the humours putrify,
 “ a real Lues is from thence bred; and then tu-
 “ mours or buboes appearing in the groin, consti-
 “ tute the first step of this disease.” This some-
 times happens, and I have seen buboes arise in pa-
 tients soon after impure venery, yet still without any
 evil appearing in any other part of the body; nor
 is

† De Venis Lymphat. Valvul. p. 48.

‡ Epistol. Respons. 11. p. 416.

is this a slight evil; for it shows the contagion of the Lues to be so active as not to adhere to the parts to which it was immediately applied, but that being received into a vessel it had penetrated farther; hence if it is not driven from the body by a proper remedy, it is to be feared, that the whole body will be contaminated by it. So have I seen not only buboes raised in the groin of a robust young man, in three days after a connection with a prostitute, but his whole skin deformed with vari or knots. The same often happens when venereal shankers, (formerly called a caries by those authors who wrote of the Lues) are treated with repelling and drying medicines: from whence *Fallopious* ‡ strictly advises, *Si fuerit caries vere Gallica, & non levis, sed maligna, vel malignissima, fugite valide, & pure, repellentia; quia nascerentur bubones*; “Beware of using strong
 “repellent remedies, in case of such a caries or
 “shankers, whether of the mildest or most malignant nature, for buboes proceed from thence.” Buboes usually follow a recent infection, or venereal shankers in the genital parts, when treated by a bad method, or a gonorrhea when suppress’d. To these causes *Astruc* added another; † *Si demum citra ullum coitum proxime prægressum sponte contingunt, & signum latentis luis Venereae Pathognomicum constituunt*; “And
 “finally, if they spontaneously happen without any
 “late coition, they constitute a pathognomic sign of
 “a lurking venereal disease.” It is certainly true, that the venereal virus, mixed with circulating humours, may be afterwards deposited in different parts of the body; so that it is not inconsistent that buboes may be raised in this manner: yet this is seldom known to happen; at least I have never seen any buboes, whose origin was not due to recent coition, or gonorrhea, or shankers badly cured. It is also well known, that it is customary in such patients

‡ De Morb. Gallic. cap. lxxxi. Aphrodis. p. 814;

† Lib. iii. cap. v. p. 218.

tients to confess their juvenile frolicks, rather than blush at such like errors committed in a state of maturity.

A venereal buboe is distinguished from other tumours of the groin, by being preceded by impure, or at least so suspected venery, by venereal shankers, or a gonorrhea. If the groin be touched in the beginning of a bubo, the glands are perceived to swell more than usual in depth, which being more increased, are united into one hard mass, and constitute a larger tumour at the base, and are more acuminate at the top; the colour of the skin appears not changed from its natural state, but afterwards grows red, when the buboe is inflamed and tends to a suppuration. A buboe is not easily confounded with an hernia in the groin, except by unskilful persons; for it is oblong from its beginning, of an unequal superficies, and is formed upon a large base; the surface of the hernia is smooth and light, approaching to a spherical form, and easily yields to the pressure of a finger, if not incarcerated; then some grievous symptoms, such as a vomiting, fits of the cholic, a fever, &c. attend it; but these never accompany a buboe. If the hernia is not incarcerated, it yields to the touch, the tumour is diminished by pressure, and the wind puffed therein strikes sound into the abdomen; all these symptoms are far distant from a buboe. Yet if a softness is perceived in a buboe already suppurated, or still suppurating, or a lurking liquid is observed by an obscure fluctuation in the buboe, all that is small and deep, and only occupies the middle of the tumour.† But where the hernia has already descended into the scrotum, it bears no manner of similitude to a buboe.

Sometimes the buboe remains a long while unchangeable, after it has obtained its whole magnitude, and it acquires a diversity of appellations, according

* Lib. iii. cap. v. p. 223.

according to the variety of its changes; if it begins to be painful, hot, and red, it is called *phlegmonodes*; if a suppuration ensues, it may be called *puodes*; if it entirely hardens, and remains so a long while, it is termed *schirrodes*.

From hence its different prognostics appear, according to the various state of the tumour; here a suppuration is not so to be dreaded, but rather to be wished, if equally spread; the schirrus is more dreadful than the rest, as the worst of evils may follow from thence; all these will be treated of hereafter, in Sect. 1461.

S E C T. MCCCCXLIX.

AN D in men a great inflammation of the member in a short time turned to a gangrene.

The penis, as hath been said, is chiefly exposed to the danger of a contagion in the act of impure venery; hence this is so often infected before any other part of the body. But a pimple or spot, itching and hot, with a gentle inflammation, rises in that place where the venereal miasma begins to adhere (see Sect. 1444;) from whence if this inflammation be irritated any way, on account of the sensibility of the part affected, the worst of evils may be the consequence. The venereal erection, by which the affected member swells and stiffens, is often the cause of a stronger inflammation; for this reason, as will be hereafter said concerning the cure of this disease, it is ordered, that low and emollient diet be used by those labouring under this disease; the use of wine and all spirituous liquors is forbidden them; they are also advised to shun all occasions of an erection in the penis, by lascivious discourses, books, pictures,

pictures, or such like exciting objects; together with those of lustful dreams, than which nothing is more hurtful. If the evil is already ripe, and these parts are corroded by a venereal ulcer, how great is the danger of a rupture in the vessels! The urethra is sometimes observed to be greatly swelled in a severe gonorrhea, as also to be gnawed by ulcers, from whence arises a most intense pain, whilst the penis is in erection; nor can it yet be co-extended in erection; the rigid penis stiffening, is incurvated downwards as if with a cord, and then it is termed a *gonorrhœa chordata*, or *chordee*.† It sometimes, and but rarely happens in a severe gonorrhea only, that the ligament of the penis, by which it is bound to the *commissura* of the *ossa pubis*, and likewise that other ligament proceeding from the *corpora cavernosa*, which constitute the penis, are inflamed; then the penis is necessarily distended thus with pain, or bent upwards, or obliquely inclined to one side: it sometimes happens, that these sufferers have an erection of the penis in their sleep, though they avoid all temptations of venery, especially if they lie long on their backs; then a discharge of the seed ensues, which is attended with the most acute pains. What violence must the inflamed penis then suffer, when distorted to this or that side! how great is the danger of a rupture of the vessels! of which behold a singular instance: *Juveni rigidus penis vehementer inflexus fuerat. Post ibi loci tumor nasci, crescereque; cute super eum, ut super corpus penis reliquum, mobili. Quum inesset mollitudo quædam, qualis maturiori apostemati, mollia unguenta apposita, & cataplasmata, quo maturaretur, quod credebatur, apostema: ex quo increvit. Spe nulla apparente, hac curatione ruptum iri, tumor, quod dissuaseram, incisus est plaga magna. Mox sanguis erumpere, prætereaque nihil: erumpere cum impetu, ut reprimi primum non posset, deinde ægre repressus fuerit, nec plane.*

VOL. XVII.

I.

Juvene,

† Ibidem, lib. iii. cap. i. p. 161. & lib. iv. cap. xi. p. 400.

*Juvene, post paucos dies mortuo, incido membrum, sedem
 quærens vitii, modumque. Invenio corpus nervosum
 majus alterum dilatatum in tumorem fuisse, extendente
 sanguine; quemadmodum in aneurismate arteriæ. Vi-
 venti, quum languebat membrum, tumor minor, molli-
 orque; quum erigebat se, major, tensusque:* “The pe-
 nis of a young man having a strong erection, was
 incurvated; afterwards a tumour arose, and in-
 creased there, the skin being still moveable upon
 it, as it was upon the rest of the body of the
 penis. As there was a certain softness in it, such
 as in a ripening imposthume, some pultices and
 softning unctions were applied to increase the
 softness, by which it might be brought to matu-
 rity, because it was thought to be an impost-
 hume; from whence it increased. No hope ap-
 pearing of its breaking by this method of cure,
 a considerable incision was made, contrary to my
 advice, and nothing but blood broke forth from
 it, with such impetuosity that it could not be
 stopped at first, but was afterwards repressed with
 some difficulty, though not thoroughly. The
 young man dying in a few days after, I dissected
 the member to explore the seat and manner of
 the evil. I found that one of the corpora nervosa
 had been more dilated in the tumour than the
 other, the blood still increased as in the *aneurism*
 of an artery: when his penis was not erected, the
 pain in that member was more moderate, and the
 tumour was smaller and softer, but greater and
 more tense when in erection.*”

It may be easily deduced from the circumstances
 mentioned in the chapter which treats of an inflam-
 mation and gangrene, why the sudden change of an
 inflammation into a gangrene is to be dreaded in
 the penis so inflamed. The danger is still more
 threatening to the wretched patient, if these more acrid
 diuretics, *balsama sulphuris dicta, ol: stillat: tere-*
bintbina

* Albini Academ. Anatom. lib. iii. p. 27,

intkina, &c. be used according to the practice of oppish mountebanks and ignorant quacks, who usually obtrude such opposite remedies upon the un-
vary.

It is to be observed, that there is a very tender tunica cellulosa adhering under the skin of the penis and prepuce, which is raised to a great tumour when affected, and may suffocate or strangle the parts placed under it. These parts are irritated by rude rubbing of the penis, or some kind of acrid matter collected between the prepuce and the glans of the penis, in such a manner that I have seen wonderful tumours produced from thence: first, in such persons whose prepuce is stretched out beyond the glans, and also gathers more about the orifice, as may be observed in young boys; this tender tunica cellulosa, when inflated, reaches sometimes beyond the glans, entirely hides it, and impedes the free discharge of urine, a part of which remains collected between the prepuce and the glans, becomes more acrid, irritates those parts still more, and thus all the complaints are increased: this tumour is almost pellucid, variously writhed, yielding to the pressure of a finger, so that this is called a *phymosis*; but when the prepuce is withdrawn behind the glans, and is also affected by this tumour, then it is usually called a *paraphymosis*; and an annular swelling, and almost equally pellucid, surrounds the corona of the glans, which stretches out beyond this annular tumour all naked. In a *phymosis* the swelling prepuce cannot be drawn backward, nor forward in a *paraphymosis*.

Such tumours are formed, though not attended with any venereal cause, though not difficult to be cured, *vidit Heers juvenem, decimum quintum ætatis annum ægentem, impollutum, Venerisque nescium, cum in interforatam diu valida latera exercuisset, glandis habuisse inflationem maximam, & lucidam, quam Lutetiæ crystallinam vocant, una cum insano penis dolore. Im-*

misit per præputii hiatus cicutæ folium, digitis leviter tritum; sedabatur brevi dolor, & repetito hujus usus tumor omnino discussus est. Postea, remedia hujus effectum sapius expertus, illud in secretis habuit

“ Heers saw * a young man of fifteen years of age
 “ ignorant of venery, who had been struggling hard
 “ to penetrate a virgin, had caused thereby an inflammation of the glans, together with a raging pain in the penis; this kind of swelling is pellucid, and is called *crystallinæ lutetiæ*. He thrust the leaf of an herb, resembling hemlock, called *cicuta* into the opening of the prepuce, after he had lightly bruised it with his fingers, the pain soon ceased, and the tumour entirely vanished by a repetition of this method. He often experienced the effect of this remedy afterwards, and held it as a secret.” We are also told by *Astruc* †, that such tumours proceed from violent or difficult venery with even an undefiled woman; but he also affirms them to be free from danger, and that they are easily cured.

In young boys, the urine is sometimes collected between the prepuce and the glans, especially if the entrance is narrow; from thence proceeds a phymosis, with such a great pellucid tumour, which sometimes greatly obstructs the free passage of the urine if warm water is injected through the orifice of the prepuce by a syringe, that the internal superficies of the glans and the prepuce be washed, that tumour usually subsides quickly, if no acrimony remain from the urine, and consequently the cause of irritation be removed, especially if *acetum lithargyri* be diluted with two hundred parts of water of the flowers of alder, and perpetually applied by way of a fomentation; yet these injections of warm water should be still repeated in the day-time, though but gently

* Observat. Medic. No. vii. p. 85.

† De Morbis Vener. lib. iii. capit. viii. p. 259.

gently, then this other may be borne even by the most tender, as it may be applied without any pain.

I have seen a formidable phymosis bred in a boy of eight years of age, who, unable to bear the summer's heat, stript his lower parts as he went to sleep; being then stung by gnats, many marks remained on his legs and thighs, and but one of these bites was observed on his prepuce, which so intolerably itched, that the lad vehemently rubbed it; from whence a very swelling phymosis ensued in three hours after, yet it was happily cured by this method.

The phymosis and paraphymosis are bred from similar causes; they indeed are troublesome, and their delay often strikes the patient with dreadful apprehensions; yet they are likewise easily cured: but when they have their origin from a venereal evil, they threaten much greater danger, nor are they so easily cured; for they, for the most part, proceed from the lurking ulcers of the glans and the prepuce, which are hid by the immoderately swelling prepuce, nor do they admit the hand of a surgeon; their cure will be treated of in Sect. 1463. These evils are all augmented, whilst the swelling prepuce obstructs the free discharge of the venereal corruption; from whence the venereal Lues is not only to be feared from the absorbed corruption, but these ulcers themselves, being perpetually moistened by this corruption, rendered more acrid by time or delay, acquire a greater malignity, so that the neighbouring parts are often most miserably corroded before the swelling of the prepuce is come down, and before the free discharge of the poisonous matter is obtained; from whence all these complaints fall into a worse state, and if a gonorrhea accompanies them, the quantity and virulence of the corruption are increased perpetually. Wherefore Sydenham * said, *Quod si ægri glans præputio undequaque contegatur, at-*

que ejusdem ora præ inflammatione usque adeo tumida, dura ac callosa, reddatur, ut nullo modo queat reduci; laterem lavat quisquis Gonorrhæam remediis purgantibus, etiam fortissimis, & quotidie ad nauseam repetitis, ag-greditur; nisi eodem tempore id agatur, ut pars ita affecta ad statum sibi naturalem redeat, sublatis duritie & tumore, unde Gonorrhææ novus utique fomes mini-stratur: “ That if the patient’s glans be every
 “ where covered with the prepuce, and that the end
 “ of it is rendered swelled, hard, or so callous as
 “ not to be reduced by any means, the patient is in
 “ vain purged daily with strong drastic remedies;
 “ unless at the same time means are used that the part
 “ affected may return to its natural state, by the
 “ removal of the hardness and tumour, from whence
 “ a new fomes of the gonorrhea is likewise admi-
 “ nistered.” But he recommends the most gentle remedies for this purpose, as it is certain, that these symptoms are exasperated by the more acrid, and that the inflammation so much to be dreaded, here increases; from whence the matter, which sticks collected between the prepuce and the glans, is to be washed away either by pure water, or the most emollient decoctions; and a powerful antiphlogistic method of treatment will be needful, as will be hereafter displayed in Sect. 1460.

As long as the tumour forming the phymosis or paraphymosis is pellucid, soft, and yielding to the pressure of a finger, and attended with scarcely any pain, the evil is less dangerous; but if the signs of a strong inflammation manifest themselves, and a sharp pain and strong fever ensue; if efficacious remedies are not then suddenly applied, a gangrene is to be feared; for in the phymosis the glans every where repressed, will be suffocated or strangled by the swelling inflamed prepuce, and still much sooner if the glans is also inflamed. In the paraphymosis, the hard annular tumour so constricts the whole ambit of the penis, behind the corona of the glans, that it obstructs

obstructs the flux and reflux of the vital humours, from whence a gangrene necessarily follows, and the mortified glans afterwards falls off; and those so foully mutilated, will remain so during life.

Such a calamity frequently reigns in hotter climates, especially whilst the patients contemn the beginning of these evils, and strenuously indulge their inclinations; such an evil is above all others to be feared, especially if a venereal ulcer being bred between the glans and the prepuce, the patient takes a journey, and travels expeditiously, particularly on horseback. I have seen a melancholy case of this nature in a young man who was taken with a phymosis upon a journey, and whilst the wretch still suffered this pain, of which by going to a great city he might be commodiously cured, a gangrene ensued, which almost destroyed half the penis: his life was indeed preserved by a skilful physician, but all the mortified part fell off.

S E C T. MCCCCL.

THE testicles when swelled are painful, and often break out into ulcers, bred by an inflammatory tumour in the seminal vessels.

The testicles are sometimes wont to swell in a gonorrhea; such tumours are usually called *testes venerei*. A testicle begins on one or the other side to be enlarged, so that it is extended every where as from its center of gravity: the sufferers feel a certain harsh tension as it were in the middle of it, as if its interior substance was pressed or squeezed from the outside; whilst the testicle swells it also hardens, but not with a schirrhous hardness, for it yields any way to a finger lightly pressing it; the

tumour seldom increases suddenly, but grows slowly, often to a remarkable size. The pain is not very great, especially in the beginning, but the feeling of the distension is disagreeable; the bulk being then increased, the testicle then by its gravity draws down those parts by which it is suspended, and if the swelling testicule is held up by lying in bed, or some other soft suspension, that pain occasioned by its stretching those parts by its weight, ceases, or at least is for the most part alleviated: usually the epididymis only swells; where the evil is much lighter, and the tumour but slowly increases; the rest of the substance of the testicle afterwards begins to swell; sometimes both testicles swell, but the tumour is still greater in one side than in the other; but as that tumour is equable while it increases, the substance of the testis seems to be increased in size by adventitious matter; and as no distension can at the same time be perceived, in those vessels carrying the humours to the testicules, and which carry them back again after secretion, the tumour of the testicule seems rather to proceed from an impediment in the evacuation of the humour, which being separated from the blood in the laboratory of the testicles, ought to be collected and kept in the seminal vessels.

But as all that is secreted by the testicles is at length conducted by the vas deferens to the seminal vessels, some celebrated physicians have concluded, that the seminal vessels are affected, if the testicles begin to swell; so Astruc * hath stated, *Si testes, sine causa, vel saltem levi de causa, tument in morbi societatem veniunt.* “If the testicles swell without a cause, or at least by a slight cause, they come into a share of this disease.” (He speaks of investigating the seat of the gonorrhœa) “then the prostate and seminal vessels, are infected by the gonorrhœa.” *Conjicitur autem vesicula alterutra tantum af-*

* De Morb. Vener. lib. iii. cap. i. p. 164.

fici, si alteruter tantum testis caleat, doleat, tumeat; utraque, si uterque: “ But it is conjectured, that only
 “ one or either of the testicules is inflamed, painful,
 “ and swell’d, but if both, so are both the vessels
 “ affected also.”

It was before said, in Sect. 1447, that these feminal vessels are infected by the venereal miasma, and that it is the worst kind of a gonorrhea, the hardest to be cured, and that many melancholy evils follow; but it is here disputed whether this tumour of the testicules is a certain sign that the venereal contagion has reached the feminal vessels or not. It is sufficient to produce a tumour, if the free passage of the seed, formed in the testicule, be obstructed in the vas deferens; from hence it seems that the testicule may swell, though no venereal contagion had reached the feminal vessels.

A wonderful conformation in these parts is observed: * the vas deferens, which is a continuation of the epididymis, together with the spermatic vessels placed behind it, ascends by the tunica vaginalis, and where it reaches to the lamina membranosa of the peritoneum, which covers the beginning of the spermatic vagina, it falls backward from these vessels in form of a bow, running through the cellular fabric of the peritoneum, to the hinder part of the bladder, to which it strongly adheres, as also to the lamella of the peritoneum, by which it is covered: moreover, it passes between the extremity of the urethra and the bladder, there it meets with the canalis deferens of the other side, and they descend together to the neck of the bladder. The cavity of those vasa deferentia is cylindrical, and is dilated where they run behind the bladder, then about their extremities they become more narrow, and are so placed between the neighbouring extremities of the feminal vessels, that the liquid, conveyed by the vas deferens, gradually insinuates itself into the feminal vessels

* Winslow Exposit. Anatom. p. 563, & 568.

vessels of the same side, nor yet can that which is contained in the seminal vessels be poured back into the vas deferens; this is proved by a puff of wind blown into the vas deferens of one side. Afterwards both the little channels or canaliculi, each of which is composed of the extremities of the vas deferens and the seminal vessels of the same side, convey themselves between the base of the prostatae, and the channel of the urethra, whose substance they obliquely penetrate, and are terminated in a caruncula, which is called the caput gallinaginis.

Therefore, whatsoever can obstruct the free passage of the liquid secretion in the testicle, through all this course of the vas deferens, may be owing to the tumour in them. I have seen this in a young man, who had but a mild gonorrhea; as he was advised to use but weak drink, and it being then winter, he drank pretty plentifully of whey. As he one day applied himself pleasingly to his school exercises, he imprudently withheld his urine for two hours, which he could not afterwards discharge with all his endeavours; suddenly a tumour and pain struck into his right testicle, and, as a skilful surgeon introduced a catheter, his urine burst forth with great force, and the tumour and pain of the testicle immediately vanished. That tumour could not be ascribed to a venereal contagion, communicated to the testicle, or to an infection of the seminal vessels; for the gonorrhea was mild, and was then much amended, by the application of a good method of cure; there was no suppression of the matter, for it freely flowed out: from hence it seems very likely, that the vas deferens had been greatly repressed by the distorted bladder; wherefore all the complaint ceased, as soon as the cause was removed.

It is true indeed, that the exit of the seminal vessel was in this case equally compressed; but these are appointed to collect and keep the genital humour, and they remain for many months full without hurt,
in

in those who live chaste ; but that the tumour of the testicles does not always follow, appears to arise from hence, that the cavity of the canalis deferens is furnished with firm sides, almost cartilaginous, whence, this channel being dissected, they fall not together, but the cavity remains circular. The celebrated Astruc * mentions a two-fold cause of the swelling testicle, viz. the suppression or prevention of the flux of the gonorrhea ; and, the venereal virus, being conveyed by whatsoever cause to the substance of the testicle : the prior cause always depends on a gonorrhea, and often accompanies it : this usually excites a great heat and pain, and the tumour then more quickly increases ; but it is also sooner and more happily cured, and, for the most part, without any remaining hardness : moreover, if the flux be suppressed, it soon returns, before any great evil breeds in the testicle. If such a tumour cannot be dissolved, it often comes to a suppuration, and the abscess being broken, it degenerates into a fistulous ulcer, very difficult of cure. Another cause was, that if the venereal virus had penetrated into the very substance of the testicle, without a gonorrhea accompanying or immediately preceding it ; the testicle in swelling from such a cause, is less painful and hot, so that it forms a chronical complaint rather, but hard to be cured ; still leaving a hardness in the testicle, which sometimes degenerates into a schirrus which is followed by the hydrocele, and yet much worse evils.

It cannot be denied, especially in an inveterate Lues, that the venereal virus, dispersed throughout the whole body, may be deposited in the testicles ; nor does it seem improbable, that this morbid miasma can be communicated to the testicles, bordering upon the affected places, especially after suffering by frequent gonorrheas : yet a gonorrhea attended all the cases which fell under my care ; and
in

* De Morbis Vener, lib. iii. capit. iv. p. 192.

in two instances an acrid, copious, and remarkable gonorrheal flux followed the tumour of the testicle, which then suddenly and remarkably diminished: on the other hand, I have observed, that the tumour of the testicle was chiefly to be feared, if the gonorrheal flux should thus suddenly stop, or be remarkably diminished, yet more so if the signs indicate the seat of the evil to adhere about the prostaticæ; which, I believe, should be always suspected, where a quantity of gonorrheal matter is formed out from the penis, in strongly endeavouring to make water. I had the cure of such a patient, who laboured under a recent but yet a virulent gonorrhea, in which both the cavernous bodies of the penis began to swell; then, by the application of specific remedies, all these evils were amended in nine days time; the flux changed from a green to a white colour, the pain of the strangury was, for the most part, removed, and the tumour of the penis greatly subsided. Tired with the restrictions to low diet, imagining all that to be vain, he went without more ceremony to a tavern, that he might indulge his appetite; he returned in five days after with the flux entirely suppressed, but the right testicle had swelled with great pain: being then more governable, in consequence of the mischief caused by his imprudence, he solemnly swore he would be obedient to advice for the future; the flux began to return the day following, and afterwards increased: the tumour and pain of the testicle diminished, and he was entirely cured in the space of a month.

I have often seen the testicles swelled by a practice of injecting astringent remedies into the penis, and that chiefly by the imprudent use of balsam capivi, turpentine, ol. stillat. balsam. sulphur. &c.

A man thirty-two years of age, of a dry and hot constitution, flew to me from a neighbouring village, to shew me a swelling, attended with an acute pain in his right testicle: he confess'd to have had a gonorrhea,

norrhea,

gonorrhea, with a venereal ulcer in the penis five weeks before that time, and that he had taken a quantity of balsam of sulphur, (which is made of flour of sulphur, mixt with turpentine) by the advice of a barber: the weather being excessive hot, as the flux almost stopped of itself, he imagined he was cured, and returned to his former habit of venery; then by a darting forth of the seed in an act of this kind, he felt a sudden and very severe pain verging towards his right testicle; in a little while after, he made water tinged with blood, and the painful testicle swelled: these evils still increased the day following. In two days after, the gonorrhea returned, though not copiously, and the swelling began to abate in the testicle; but the day following, both the tumour and pain of the testicle increased again; there was a great sediment in his urine, the hardness in the swelling testicle was diminished; and, as the gonorrhea still flowed, its quantity of matter increased by degrees; so that the pain was already eased, as the patient could rub his testicles lightly with his fingers, without increasing it. The gonorrheal flux was white, with only a light strangury attending it. In sixteen days after this right testicle began to swell, a buboe was felt in his left groin, which nevertheless disappeared entirely in a short time, by the application of proper remedies, (more of which will be said in Sect. 1462.) and he was compleatly cured.

It appears from these circumstances, that a tumour of the testicles often proceeds from a suppressed gonorrhea, especially if it had fixed its seat about the prostatae, and thus the free passage through the orifice of the vas deferens is obstructed by the swelling of these and their neighbouring parts. For which when the gonorrhea returns, the swelling is diminished in them, the tumour and pain of the affected testicle are in a short time diminished, which would not happen if the cause of the evil adhered to the

the substance of the testicle. It therefore is confirmed, that the tumours of the testicles chiefly occur after the gonorrhea begins.

It appears from that remarkable case which I have mentioned in Sect. 432, how dangerous the use of balsam of sulphur, terebinthina, and such-like remedies is. This man could not be suspected of ever having a gonorrhea, nor any former or present symptoms of the venereal disease; yet he laboured under a light strangury, which took birth from some unknown cause: he remembered that he had been cured of a complaint of this kind formerly, by the use of balsam of sulphur; wherefore he took it again at different times, not only ineffectually, but with most unfortunate success; for a violent inflammation of the genitals ensued, and terminated in a gangrene, from which he with great difficulty escaped; for a part of the urethra, consumed by the gangrene in two places, fell away; and he ever after urined through a passage of the urethra then remaining in the perinæum. These remedies act by an acrid stimulus, of a long continuation in the urinal passages; as is demonstrated by the case of this unhappy man, whose urine for four days, after taking this balsam, diffused a most intolerable stench; he also discharged a thick, mucose, and copious sediment, which is usually caused by taking these more acrid diuretics, and sometimes by the external application of blistering plaisters, prepared with cantharides. It was also attended with a troublesome strangury, followed by a strong inflammatory pain in the peritoneum.

If so many evils resulted from the imprudent use of such remedies, by a sound robust man of an excellent constitution, how much more are they to be dreaded, if driven thus into the genitals of one labouring with a gonorrhea?

S E C T. MCCCCLI.

AN D also caruncula, strangury, corrosion of the urethra, prostatae, neck of the bladder, and feminal vessels, which also are evils alike incident to women.

The reason of the symptoms here recited may be easily collected from what was said of the gonorrhea in both sexes in Sect. 1447; for the strangury from the defect of the mucus lining the internal superficies of the urethra, may well be caused either by its own inflammation, or an ulcerous corrosion; then it was also said, that the prostatae, the neck of the bladder, the feminal vessels, and all their neighbouring parts, are sometimes corroded in the worst species of a gonorrhea. There only remains that something be said of the caruncula, which is often a most troublesome evil, of whose nature and cure there is no unanimous opinion as yet, amongst the most learned of the faculty. Many have taken the caruncula for luxuriant flesh, and Sydenham * in describing the evils, which follow or accompany a gonorrhea, thus has it: *Nonnunquam etiam, erosa atque excoriata urethra jugi puris acrioris fluxu, natura, in carne nova vice jam deperditæ justo occupatior, laxam quandam & spongiosam substituit, quæ, mole quotidie aucta, & sensim indurata, caruncularum excrescentiis ita meatum urinarium infertit, ut tandem lotio non detur exitus; quæ quidem carunculae nihilo minus ex ulceribus sibi adnatis ichorem quemdam evomunt, & tum Medico crucem figunt inter curandum, tum ægro magis ipsa morte timendum malum:* “ Likewise the urethra “ is excoriated and corroded by a flux of a great “ quantity of the more acrid corruption. Nature now “ being

“ being too attentive to the formation of new flesh
 “ in the place of that which is destroyed, substituted
 “ that which is loose and spongy, which daily in-
 “ creases, and gradually hardened, fills up the pas-
 “ sage of the urethra with carunculæ, so that no dis-
 “ charge will be at length given to the urine : these
 “ carunculæ pour forth a certain foetid matter from
 “ ulcers bred in themselves ; then the physician
 “ stands aghast in treating them, and the patient is
 “ threatened with a greater evil than death itself.”

It easily appears, that by this luxuriant flesh, the
 cavity of the urethra is rendered more narrow, and
 the free exit of the urine is impeded, and that like-
 wise a total suppression of the urine may follow.
 Whilst such an evil is breeding, or not, yet fills the
 channel of the urethra, the urine flows not out in a
 full stream as from sound persons ; but it also di-
 vides itself into a forked manner, or in two streams
 like two threads, whilst the urine by the force of the
 bladder contracting itself, and by the great endea-
 vours of the patient, is forced by the carunculæ, which
 in some degree stops up the passage. If the evil
 continues to increase, the urine only comes out by
 drops, and is almost totally stopped by that obstruc-
 tion. Some unhappy wretches endeavour to force
 their urine out by holding their breath, and so exhi-
 bit a most melancholy spectacle to the physicians.
 All these symptoms in the mean time demonstrate an
 obstruction of urine, by the obstacle which closes the
 channel of the urethra, whether that obstacle sticks
 in that cavity, or whether it is beyond it ; whilst the
 neighbouring tumour, by pressing the urethra di-
 minishes its cavity, or entirely shuts it up ; often a
 difficulty of urine, or a total suppression of it hath
 been observed from the swelling prostatæ, though
 perhaps no obstacle is found in the channel of the
 urethra : so a tumour was felt in the perineum of a
 soldier of fifty years of age, who had tried by va-
 rious remedies to discharge it ; but it still increased

to the magnitude of a hen's egg: that tumour so repressed the urethra, that after a dysuria, and a strangury, a deadly ischuria followed; a catheter could not be thrust into the bladder, nor could the surgeon dissolve the tumour, or empty the bladder, by all the art he used; from whence the patient died, after being a thousand ways excruciated. After his death it appeared, that the prostatae were converted into a great abscess, filled partly with corruption, and partly with blood, which formed that tumour*.

Skill might certainly have relieved this wretch. If a hard tumour is bred in that part, and can neither be dissolved, suppurated, or removed by the hand of a surgeon, there scarcely remains any hope of a cure: so about the root of his yard, above the sphincter of the bladder, a fleshy hard tumour was discovered, equal in bigness to a hen's egg. When the tumour was cut through, the middle of it was found full of matter, white as plaster; the prostatae and seminal vessels much hardened. *Petit* † avers, that he had three times found the swelling prostatae to have so compressed the neck of the bladder, that a total suppression of urine followed: he also remarks, that he found no caruncula's in twelve bodies he dissected, after perishing by a suppression of urine. His account of this matter is very concise, but it is very likely that he suspected the carunculæ of the urethra, were the cause of this ischuria, before the dissection; or at least he was willing to know whether the carunculæ were so frequently to be found, as they have been affirmed to be by many persons.

But as the channel of the urethra may be girded by the cavernous body, (as before mentioned in Sect. 1447.) which is of a similar nature to that of the cavernous bodies of the penis, and that the ve-

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nereal

* Baader Observat. Med. p. 136.

† Academ. des scienc. l'an, 1718. Hist. p. 40.

nereal contagion may penetrate these parts, and sometimes produce a tumour, as is evident from observation, especially in the cavernous bodies of the penis; from hence some very skilful men of the profession, began to think whether the cavernous body of the urethra could not swell by a similar cause, so as the cavity of the channel might be remarkably diminished or entirely stopped up: wherefore from hence they thought it might be also understood, that the cavity of the urethra might appear free after death, though shut up or straitened during life; for it did not seem absurd to them, that such tumours should subside immediately after death. The celebrated surgeon Sharp* proposes this opinion as a pure hypothesis, and confesses to be inclined to believe it just; as it is certain, that in some cases the channel of the urethra, which appeared obstructed during life, was found entirely open in a few hours after death. He believes this hypothesis confirmed by this observation; that the mucose membrane of the nostrils may sometimes swell, that the nostrils may be entirely stopped. Yet he confesses, that this cause of the obstruction of urine, has not been as yet so evidently demonstrated, so as that it may be considered as very common, as some would have it.

As the urethra, as before said, is placed in the inferior part of the penis, such a tumour seems not difficult to be explored by the fingers. The celebrated *Antonius Benevoli* †, who with great reputation, taught and practised surgery in the hospital at Florence, called *sancta maria nova*, remarks, in his writing about the cause of an ischuria, that the most of the skilful physicians of Tuscany had been of opinion, that carunculæ or little swellings bred about the neck of the bladder, were the cause of suppression of urine, which ceases if these swellings

* Critical Enquiry, &c. p. 166.

† Dissertazioni, &c. Dissert. ii. p. 42, & seq.

can be dissolved; or otherwise that the liberty of ejecting the urine is restored by the suppuration and purulent evacuation of the broken abscess: from whence they all directed their attention to this method of cure. *Benevoli* acknowledges, that this opinion was not altogether approved by him, as a catheter could, with small difficulty, be introduced into the bladder, so as to let out the retained urine; which seemed almost an impossibility to him, if such an obstacle should impede the ejection of urine from the bladder: hence he resolved upon an enquiry into the cause of this disease in the bodies of those who died by this ischuria: and this man, most worthy of credit, affirms, that he never found even the shadow of such a little swelling about the neck of the bladder, or in its neighbouring parts, in all the bodies he dissected after dying of this evil in that great hospital where he presided; but he constantly saw the internal superficies of the bladder almost raised in all these dead bodies, and altogether disformed of the natural mucus, which defends it from the acrimony of the urine: he sometimes also found some excoriation, either more or less, in that place of the bladder where the mucus was wanting, according as the disease had continued or not; so that after long suppression of urine, the internal membrane of the bladder was excoriated, and indeed sometimes found turning black: he also saw the prostatae not a little swell'd in some of these dead bodies, yet he never found them suppurated, or damaged in any other manner.

This celebrated practitioner inclines to an opinion, from these observations, that this ischuria is not bred by the caruncula, but is attendant upon the excoriation of the internal membrane of the bladder; and the matter which flows out with the urine, by the introduction of a catheter, is not corruption, but a mucus which smears the internal superficies of the bladder, with which blood is sometimes mixed, which

may proceed from the corroded vessels of the bladder. But as he had observed, that the internal superficies of the intestinum rectum was excoriated in those bodies which died of a tenesmus, he believed that the perpetual ineffectual inclination of making urine, an ischuria, is bred from a similar excoriation of the bladder: from hence the same very grievous pain in making urine, often follows after a tenesmus of the anus. The pain is sometimes so excessive, and the urine so muddy, viscous and bloody, that some physicians suspect it to proceed from a stone lurking in the bladder, as the case was in regard to a young man so affected; * yet the exit of the disease taught them a contrary opinion.

It is indeed thus understood why the dysuria or difficulty in making urine is formed; but it does not from hence follow, why the dysuria, or total suppression of urine, should be formed from such an excoriation. An author understood and endeavoured to clear this difficulty in a different manner; † but it does not plainly appear, that he was then able to prove his opinion by all his flighty arguments: for it seems that it may be concluded from the practical cases which he alledges, that the excoriation of the bladder is the effect rather than the cause of the precedent ischuria; for whilst the bladder is excessively distended by a total suppression of urine, and the delayed urine becomes more acrid, it is no wonder that the bladder may be inflamed, suppurated and excoriated, whilst the internal membrane shrinks back. I have seen some more such cases in the *historia medica*, which confirm what has been just now said. As this author himself affirms, that he found the prostatae in the greatest part of such dead bodies not a little swell'd, the ischuria may with more likelihood be attributed to this obstacle. This at least appears from what has been said, that

* Dissertazioni, &c. Dissert. ii. p. 44.

† Ibidem, p. 48.

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the caruncula is not so often in the urethra as it is believed to be ; for Morgagni * observed some signs of a former ulcer in the urethra of an asthmatic body. *Aderant tres quatuorve chordulæ, albæ, tendineæ, in transversum ductæ, non valde prominentes, nec usquam se ab interna urethræ membrana sejungentes. Erat intra has chordulas interstitium ; tum, medio ferme inter primam & ultimam loco, urethra se tanto spatio, quantum duo circiter, occupassent transversî digiti, contractabat, ut ibi, dimidio propemodum, quam supra, aut infra, esset angustior :* “ There were three or four little white strings stretched across, but not projecting much, nor separating themselves anywhere from the internal membrane of the urethra : there was a distance between these cords ; between the first and the last they took up about a finger’s breadth in the urethra, which so contracted itself in the space they occupied, that it was almost as narrow again in that part as above or below.” But the strings in the cavity of the urethra projected in the same place, so that a specillum or probe could not pass, either from the glans upwards, or through the cut urethra, where the prostaticæ terminate downwards : yet he mentions no growing carnosity, which certainly could not escape the sight of so reputed an anatomist, if it had been there.

This cause of the dysuria and ischuria, dependant only on the stricture of the urethra, appears very frequently ; and a celebrated surgeon * believes it to be the most frequent of all other causes ; and that sometimes it only takes up a small place in the urethra ; sometimes grows to a considerable length, frequently in three or four different places ; and that such a constriction is sufficient to produce all those evils which are wont to be attributed to the increasing carnosity of the urethra.

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* De sedibus & causis morbor. tom. II. p. 197, 198.

† Sharp’s Critical enquiry, &c. p. 143, &c.

It is certain, that a great contraction in the membranous parts of the body sometimes produces obstinate and difficult diseases. Sharp* saw the intestinum rectum so contracted about the anus, in four persons, that the cavity of that intestine did not exceed the diameter of a goose's quill in one of these patients; the scars remaining from wounds and ulcers healed, often leave such a contraction for some weeks and months; hence it will seem no wonder, that such contractions of the urethra frequently occur after one or more often-repeated gonorrheas: but it seems wonderful, that such an evil should occur after a gonorrhea many years healed. They begin by making water with trouble, which gradually augments; the urine flows out like a small thread, and sometimes runs into a double or forked stream: if proper remedies are not soon applied, a total suppression of urine follows, particularly in those who indulge themselves more freely with women and wine: it is known how much all these parts may swell whilst the veins are puffed up by the yesterday's wine. Perhaps a slight impediment, formed in the urethra, which might be borne without any damage will stop the channel, whereby the neighbouring vessel suddenly swelling, the urethra is inflamed and the channel straitened. It is to be remarked, that the pain is in such a case diminished, if the contracted urethra is dilated by a leaden pencil, or a bougie; for the pain and strangury are mitigated, and the patient can retain his urine much longer. Sharp† wondered that he had diminished the pain by an extension of that contracted channel; but he observed, that the same happened in other kinds of contractions. From a ganglion placed under the ligament of the wrist, may proceed a contraction of the fingers (which usually happens); so that the top of the fingers, or the palms of the hands are oppressed.

* Sharp's Critical Enquiry, &c. p. 144.

† Ibidem, p. 145.

pressed with great pains, which diminish in the same proportion as the fingers are extended, and held in that position by a proper bandage : such an extension ought to be gradually made, and not at one and the same time, as may be easily understood. Hence also thicker instruments should be successively used, in the dilatation of the urethra. After the fingers are entirely extended, the pain ceases, but returns when the fingers are let loose, and they spontaneously begin to be contracted again.

But as such patients felt so sudden relief from the dilatation of the urethra, it cannot be believed, that a suppuration could be excited in so short a time in the urethra, so as to consume the obstacle lurking in the channel, or remarkably diminish it ; and moreover, the strangury will immediately return, when these dilating instruments are withdrawn. It appears therefore, that this alteration is to be attributed to the sustentation of the fibres, which are forced into a strong contraction.

From these and many more such like observations, some have believed, that carunculæ were never in the channel of the urethra ; as so many other causes are known, which may produce all these evils which are usually attributed to these carunculæ. I have read the famous *Daran's* * collection for the cure of these diseases, with deserved attention. *Sharp* † indeed believed, that it seldom happened that the carunculæ are alone in the venereal ischuria, but for the most part have these attendant symptoms, stricture of the urethra, callous scars, protuberances of the corpus spongiosum of the urethra, (which certainly belong or relate to the carnosus excrescences) ; and yet he confesses to have seen carunculæ in the urethra, but of so small a size, that they did not exceed the head of a small pin ; from hence they scarcely seem

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* Observat. Chirurg. sur les maladies de l'urethre. Discours Prelim. p. 30, &c.

† Critical Enquiry, &c. p. 160, 161.

able to stop up the channel of the urethra, unless that some other causes are also necessary thereunto: he also believes, that the carunculæ, as being of so small a size, were neglected by those who searched for the cause of the ischuria in dead bodies, especially as they expected to find each of them grown into a fleshy lump, of far greater growth, and so denied or contradicted their existence: it is also very likely, that those fungous bodies were fallen together after death, and were greatly diminished of their bulk, as it was observed in Sect. 1423, where the signs of the stone in the bladder are treated of; it may be seen, that the internal superficies of the bladder is sometimes besieged by growing carnosities, different in size; and as the urethra seems to be produced by a continuation of substance, almost from the neck of the bladder, it is not wonderful that such evils should happen in the channel of the urethra: but Sharp observed, that such growing carnosities, though small, had produced great pain in the urethra of a virgin; they occupied the orifice of the urinal passage, and for many months excruciated her with the most intolerable pain, which did not cease till they were all extirpated: he adds, that he dissected some urethras in which the carunculæ were manifestly found, but he also found some other impediments in some urethras; in one he found a filament placed across the channel of the urethra, near the verumontanum, which totally obstructed the entrance of the catheter into the bladder; from whence the ischuria was rendered mortal. He saw many more such filaments in another body, all grown together by one extremity to the membrane of the urethra, whilst the other ends fluctuated in freedom; yet one of these was nine twelfths of an inch long, and adhered to the urethra by both its ends; its course ran parallel to the axis of the channel. There occurred in a third body a small growth of flesh, resembling

sembling one of the valvulæ tricuspidæ of the heart.

These carunculæ cannot be perceived by the eye, in living bodies, except when they adhere near the orifice of the urethra: it happened that I twice saw such a caruncula. A youth of twenty-two years of age, had laboured under a gonorrhea, of which he was so cured, that no traces of the disorder remained: in some weeks after, he came to me for advice, shewing a little fungous lump of grown flesh, about the distance of one twelfth of an inch from the orifice of the urethra, and as it were springing from it, but it was of the colour of that part to which it adhered. I touched this caruncula with some lapis infernalis, then stopped my hand whilst it grew black, and the pain quickly subsided, without any other inconvenience: as it then but partly fell off by this manner of searing, I touched it a second time with the lapis infernalis, and entirely burned it away. But that I should be careful lest the caruncula, thus seared by this caustic, should immediately touch the opposite side of his urethra, I held the orifice of the urethra for some months dilated, and fomented the part, touched with the caustic, with a little sponge wet with warm water, in which I had diluted a few drops of oil of tartar per deliquium. It is well known, that the lapis infernalis destroys the fungous flesh in an instant; hence a light momentary touch is sufficient: but the oil of tartar per deliquium is to be diluted with much water, so that it may be rendered more mild, as that it may not have power to irritate it, whilst it draws to itself the concentrated acid of nitre, (which being united with the purest of silver, constitutes the lapis infernalis); which being done, the silver remains, from which there is nothing to be feared.

In some months after, this same young man contracted a gonorrhea by impure venery, of which he was happily cured, yet a fresh caruncula sprung up
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in the same place, and he was again cured by the same method : that so terrified him, that he afterwards lived chaste and free from all evils of this nature.

It sometimes happens, that the channel of the urethra, especially about the orifice of it, is besieged with venereal warts, which are distinguished from carunculæ, because they are harder and more callous : it does not appear, whether such warts adhere more deeply into the urethra or not ; yet if they certainly did, they in like manner may create an impediment of urine, as the carunculæ do, and perhaps a greater, as such warts bred in the glans, and the internal parts of the prepuce, grow to a large size. I have set down another observation in Sect. 2372, of a young man labouring with a virulent gonorrhea, who, after a strong mercurial purge, consisting of *Turbith minerali*, *Scammonei*, *Resina Jallapæ*, was not only much relieved with regard to the gonorrhea, but from many warts besieging the orifice of the urethra, which became flabby and wrinkled, then fell off in a few days after : I confess, that I hope to reap great success, by the application of such a remedy in such cases. I think I have seen some little flabby pieces of skin discharged with the urine, after the use of this remedy ; these resembled the wrinkled venereal warts ; yet, as I have but once observed this, I am not willing to affirm any thing relative to it for certain.

It is indeed manifest from what has been said, that the dysuria and ischuria are not always occasioned by growing carnosities, but that they and many other causes may produce the same evils : but we see that many physicians and surgeons, had commonly thought of the carunculæ alone, and had directed every method of extirpating or curing them formerly : but as they knew how to repress the fungous flesh of wounds and ulcers by the external application of drying remedies, and thus entirely consume

sume them by these corrosive applications ; they from thence thought of applying such like remedies to the carunculæ of the urethra ; yet they have not been solicitous enough to fortify the whole and sound parts against the action of corrosives : so *Pareus* * advises, that a leaden cylinder, pointed and rough, for about a fingers breadth, at the end like a round file, be thrust into the urethra beyond the carunculæ, and then be worked so as that these grown carnosities may be destroyed and rubbed away : he would have this done somewhat roughly, that a remarkable hæmorrhage may follow, which he commends for emptying the shifted vessels ; and he describes a cutting instrument, which can with safety be introduced along the urethra, unto the carunculæ ; then he orders the penis to be pressed against the cutting point of this instrument, that so the carunculæ may be taken away : he also orders by another method, that some acrid and corrosive powders be injected to the carunculæ, such as that of *sabina*, *antimonium*, &c. likewise advises, that *verdigris*, *auripigmentum*, and *vitriolum Romanum* be applied ; yet he cautions not the operator to touch but the fungous flesh only, with these corrosives, that the rest of the superficies of the urethra may remain free.

Some others being afterwards confident of this method, imitated it ; so we read that † *Solingius*, being consulted by a man whose urethra was almost entirely fill'd with malignant callous excrescences, *immiserit in illam specillum incurvatum argenteum, undique crenis sive incisuris tusum, cujus ope, quamvis non sine ingenti dolore, tantum ibidem effecit spatium, ut illico urinam quodammodo reddiderit miser* : “ he thrust
 “ a silver crooked probe, which was notched or
 “ hacked every where, into the urethra ; then he,
 “ by the assistance of this instrument, though not
 “ without

* Oeuvres d'Ambroise Paré livre xix. chap. xxvii. p. 458.

† Stalpart van der Wiel observat. rar. part. 2. observat. 40.

“ without great pain, made such an opening there
 “ as could immediately permit the wretch, in some
 “ measure, to make water.” He afterwards attempted to consume these callosities with remedies, but in vain; from whence he cut the whole length of the urethra, except the glans; consumed the whole callosous substance with a corroding remedy; then sewed up the urethra with small silver needles, as is usually done in the cure of a hare-lip: but he also thrust in a small flexible catheter, during the time of the cure, to afford a free passage to the urine. Though this man had suffered such excruciating pains, he afterwards impudently boasted, that the knotty scars in his penis rendered him more pleasing than before to the Italian prostitutes.

Nobody will easily imitate this cure, which requires so many dissections of the urethra; and that still less, which is attempted by corrosives injected through the whole urethra to the place where the obstacle lies: the use of corrosives can never be safe, unless the eyes can direct the hand. How many evils are to be feared, when such-like methods of cure are attempted by empirics or quacks, whose impudence equals their most stupid ignorance! A famous surgeon,* who flourished about the end of the last century, saw many such patients miserably perish by those methods, even in twenty-four hours after the bougie was introduced, with a corroding remedy, into the urethra: but as that author believed, that no caruncula was ever found in the cavity of the urethra, he placed one only hope in the dilatation of the urethra, by *bougies* thrust in, gradually and successively thickening, and a long time kept there; whilst at the same time those who rendered themselves thus obnoxious to torture, led sober lives: for it is observed, that such evils will become

* Saviard nouveau Recueil d'observat. Chirurg. No. 74, p. 325, &c.

become more violent again, whilst the unwary indulge themselves with women and good cheer.

Some more prudent surgeons, who devised a method of consuming these filthy excrescences in the urethra with milder remedies, and more caution in the application of them, have attempted this matter: they explored the urethra with a thicker wax candle, or a bougie, until they touched the obstacle to the freedom of urine; they measured the length which entered the urethra, and so determined the place exactly where the evil adhered. If any more such obstacles were there, they can be distinguished by either taking out the bougie, or dipping it deeper into the urethra.

But as the wax, of which these bougies are prepared, may sometimes be brittle, before the heat of blood softens it, and as the urethra running through the inferior part of the penis is exposed to the ambient air, it sometimes happens, that the wax is broken; from hence the wick remaining entire, in that place where it formed an angle, can hardly be withdrawn without some damage; for this reason, the surgeons, in the sixteenth century, rolled a candle in the thinnest and oldest cloth.* At this day, as it is well known, wax candles are scarcely used, but tents of rolled linen and sparadrap, steeped in medical preparations like a plaster, are applied, which cannot break, but always can be drawn out whole.

They anointed the end of such a candle with the very remedy they hoped to succeed with in the consumption or removal of the obstruction of urine, either by a light corrosion or a suppuration; and whilst they endeavoured at this, they were also careful, that such a corroding remedy should not irritate the rest of the internal superficies of the urethra. Some others thrust a silver tube into the cavity of the urethra, to where the evil or obstacle lies, and then thrust a smaller candle, or one of these tents, with

* Astruc de Morbis Vener. tom. II. p. 817.

with the end dipped in the corroding remedy, through the tube; such an ointment is described * to be composed rather of drying than acrid corroding remedies; such as, *Cerussam, Tutiam, Lithargyrium, Antimonii pollinis, &c.* opium also being added, that the sensibility of the place affected may be diminished: these may suffice, and by these the fungous grown flesh, which formed such an obstacle, may be also diminished. So the cure was continued *per 15, 18, aut 20 dies, juxta mali magnitudinem, & prout carnositas videbatur aperiri, ac in pus resolvi*, “ during 15, 18, or 20 days, according “ to the violence of the complaint; and so the car- “ nosity was seen to open and dissolve into corrup- “ tion;” for such a cure cannot be perfected more safely, then by a kind suppuration. *Cum autem videbis, urinam libere & facile reddi, pauco pure turbatam tunc oportebit, primum unguentum griseum (quod nempe Cerussam, Tutiam, &c. continet) a candela tollere; sed illines candelam totam secundo unguento (quod ex unguento rosato Galeni, albo Rhasis camphorato, & pomato sine speciebus, paratur), continuando octo aut decem dies; quousque pus non amplius effluat cum candela, nec ullus dolor inter meendum percipiatur, quo tempore abstinendum erit a remediis: †* “ But when “ you see the urine troubled with but little corrup- “ tion, and freely flowing out, lay aside the use of “ this first ointment, (composed of cerussa tutium, “ &c.) but you must anoint the whole candle in “ this second ointment, (which is composed of un- “ guentum, rosatum Galeni, album Rhasis campho- “ ratum, and pomatum sine speciebus): this is to be “ continued for eight or ten days; after which, if no “ more corruption will come out with the candle, “ nor any pain be felt in urining, then it will be “ time to use no more remedies.”

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* Astruc de Morbis Vener. tom. II. p. 817.

† Ibidem.

It plainly appears, that an open field has been left to men skilled in this art, by divers methods to attempt the cure of this most painful ischuria, which often follows a repeated gonorrhea, and often returns to many persons who believed themselves entirely cured and free from this evil.

Other prudent physicians and surgeons wished for nothing more than to find out a method and remedies by which these obstacles of the urethra might be eradicated, without any great damage to the channel of it, and without those most malignant symptoms, which were so often the result of imprudent trials of cure, and often threatened the loss of life to the patient; they sought for efficacious but yet safe remedies; they scarcely hoped to be able to perfect a cure without some pain, and farther damage attending it; yet an excess of these ought to be avoided so far, as that no dangerous inflammation may be the consequence: but as it is so often suspected, that the contagion of the venereal disease lurks in these evils, it is no wonder, that mercury, and all its various preparations, were applied to that place affected in the urethra, that it might be healed, not only by an internal but a local application also of these remedies and such like. *Alexander Trojanus Petronius* *, who wrote of the Lues two centuries ago, commended the application of red precipitate powder, for consuming the carunculæ in the urethra; but he also affirmed, that the common precipitate sold in shops, and composed of quicksilver and aqua-fortis decocted to a dryness, can hardly be applied without danger, as it may contain a concentrated acid of nitre; whereby it is strongly corrosive: from whence he recommends a precipitate made of quicksilver without any additional acrids, but mixt with gold or silver that hath been a long while digested; then he adds, *At si verum est, (ut a quibusdam accipio), ex solo ipso argento vivo, absque*
ulla.

† Aphrodisiac. p. 1354, 1355.

ulla alia mixtura, confici posse, id profecto & omnibus antiponi debet, & minime omnium dolore afficiet. Neque nos deterreat, quod iidem dicant, id egere longissimo temporis spatio, ut puta decem pluriumque mensium, & summa tum cura tum diligentia; hoc enim, quominus paretur, impedire quidem potest; sed, ubi paratum est, magis quam alia profit, non potest: “ But if it be
 “ true (as I have it from certain persons) that that
 “ precipitate can be perfectly formed of quicksilver
 “ only, without any other mixtures, it must be preferable to all others, as it will also cause the least
 “ pain: nor should it deter us, because these same
 “ persons say, that its preparation requires a very
 “ long space of time, such as for ten or more months,
 “ and with the greatest care and diligence: this may
 “ indeed impede its being prepared; when fully
 “ prepared, then it is more effectual than all others.”

And still all these laborious mercurial preparations, though attended with less acrimony than those composed of the spirituous acids are not yet totally void, of acrimony; as I have said upon another occasion, in Sect. 135, No. 4.

They who boasted of being the most happily successful in curing these evils, concealed their secret. So by the testimonies of *Trincavellus* and *Alexander Massaria*, one *Peter*, a native of France, was celebrated as the most skilful in Venice, at extirpating these carunculæ, as his son also was after him: he thrust bougies, when he had anointed their tops with certain corroding medicines, into the urethra; then, in the same manner, used another remedy for healing and cicatrizing the wound in the urethra. The duke of Parma obtained this secret, who communicated it to the grandfather of *Franciscus Roncallus* a physician of Brescia: this unguentum consisted of one part of *Cerussa Campborata*, and two parts of *unguentum de tutia Vigonis*, to which, when mixed together, was added such a quantity of red precipitate, finely ground, as was sufficient to tinge the whole

whole mass with its colour.* It would have been certainly more prudent to limit the quantity of the red precipitate by an accurate weight, than by the colour of the mass, whose intenseness may be thus altogether varied.

We read that Henry the fourth, king of France and Navarre, laboured under a strangury and dysuria during eight years, † both which were followers of a former gonorrhea; and it is said, that he was cured also by this method in the space of five weeks. The powder, whose preparation remained a secret, was mixed with fresh butter, which Loyseau, the king's physician, laid on the caruncula of the urethra, by the help of a little pipe, very tenderly in the evening, then washed it out of the urethra the next morning with milder remedies; and so he went on until the caruncula was consumed, then applied remedies for bringing it to an eschar, &c. But though this physician was a gentleman by birth, a deserving compleat man, and destitute of a son to whom he might leave his secrets as an inheritance, he still left those remedies he used unrevealed. *Usque adeo magnam vim consuetudo obtinet in plerisque, ut ea, quibus assuevisse olim fructuosum fuit, pergant agere, etiam dum sibi nullus inde fructus futurus est:* "Custom" has such power over most men, that they will continue to do or attend to those things which used to be profitable to them, even when it is impossible that they should receive any farther advantage from them.‡

Others applied different remedies to heal the carunculas of the urethra; they mostly mixed crude, or quick mercury, or a mercurial preparation of a milder nature; white precipitate, mercurius dulcis, &c. All praised their own remedies, and affirmed, that they had seen the most prosperous effects of them. Some others closely concealed their secret

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* Astruc de Morbis Vener. tom. II. lib. vi. p. 761.

† Ibidem, lib. vii. p. 897. ‡ Ibidem, p. 898.

methods of cure, lest they should be greatly cheapened, and lest the gains expected from them should be diminished by revealing them: it would be over tedious to search anxiously into all these, nor would the utility perhaps compensate the tiresome labour. It may suffice to mention some specimens, such as of the candles or bougies which *Jacobus Daran* used. He formerly attended both in the emperor's army and hospitals; he afterwards had the honour of being received surgeon to the king of France, where his chief operations consisted in the cure of the carunculas in the urethra, and he published a treatise* of a new method of curing these evils. I have attentively read that work, and collected the following matter from thence.

The tents or candles, so called, terminate in a point from a larger base; they are flexible, or are at least so softened by the heat of the urethra, that they may acquire a due flexibility, and be commodiously worn by the patients.

The effect is, to excite a suppuration in the urethra, and by that to dissolve and consume the fungous fleshy excrescences and warts, but without any corrosion: besides, by the use of these, there comes a flux of gonorrheal matter forth, which is yellow turning to a green, (whose suppression he stated to have given birth to these evils) it renews and almost returns as a recent one: from hence he chiefly proves, that the patient, in that stage of a cure, will infect a woman if he lies with her.

These tents are said to have this wonderful effect, that they act not on the sound parts of the urethra, but only on those places of it where the obstacles, diminishing the cavity of the urethra, adhere, and so are consumed by the suppuration produced therein; from whence if they are also thrust into the urethra of a sound man, they will in no wise operate, as they want a corroding power; nor do they yet excite any

pain

* *Observat. Chirurg. sur les maladies de l'urethre, &c.*

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pain in the diseased, though their action is so quick, that in three or four hours after they are applied, the corruption will begin to come forth.

Besides, it is proved, that a scirrhus hardness may be dissolved in the same manner; yet it appears, that this does not always succeed, as the author acknowledges, that he could not dissolve a scirrhus hardness occupying the bulb of the urethra.

There is no regimen of diet prescribed during the time of the cure; few or no remedies are inwardly taken, for the whole cure is expected from a local application of this remedy, if the place affected can be touched by it. Where the cure is notwithstanding protracted beyond its usual time, then the author confesses, that the venereal virus must be still extirpated by a specific remedy.

The cure by these candles will take up the time of thirty or forty days, and is sometimes prolonged to two or three months, and longer yet in more difficult cases.

Bougies of a different efficacy are applied in this cure, on account of the diversity of the evil which they are to take away; yet, though no pain is usually excited by this remedy, the author still acknowledges, that some anodyne candles are put into the urethra to abate the pain produced there by the first. It sometimes happens, in the beginning of the cure, that the bougie cannot be thrust deep enough into the urethra, whilst it meets the principal obstacle adhering there; whence being, by the efficacy of this remedy, removed, the bougie is thrust farther in until it meets a new obstacle; which is in like manner removed, until the whole length of the urethra becomes free, and until no more corruption comes out, or is observed to adhere to the bougie, after a long stay in the urethra; for so the certainty of a complete cure may be conceived, without any fear of a relapse. But as the author states the power of the remedy to be so very active in that place where the ob-

struction of urine adheres to the urethra, and not in the sound remaining superficies of it; he imagines from hence, that he can distinguish the length and breadth of the place affected, on the bougie when drawn out, by the corruption still sticking on that part of it which was more contiguous to the morbid obstacle. Some other men, famous in this art, were rather of opinion, that the internal superficies of the urethra is so sensibly irritated by the application of the bougie, that the quantity of natural mucus may be increased and smear the cavity of the urethra, so that what sticks to the bougie, by a long delay in the urethra, should not be taken for corruption, but for a natural mucus copiously discharged. *Daran* solves this difficulty, by the following argument: he particularly affirms, that a bougie introduced into the urethra of a sound man, who never laboured under a gonorrhea, and there left for four hours, will be altogether clean when drawn out; then, if the same bougie be thrust into the urethra of a man having a gonorrhea, and there left during the like, or yet less time, the superficies of it will be covered with thick matter; which should equally happen from a sound man, if that matter, thus sticking to the bougie, had been a natural mucus copiously purged by the irritation of the bougie sticking in the urethra: besides, he remarks, that the whole ambit of the bougie would be then touched by that mucus: no, truly, but that part alone which was contiguous to the place affected, which he boldly affirms to be a constant fact.

Samuel Sharp *, famous in the art of surgery, confesses, with his usual candour, that *Daran's* arguments are very weighty; yet he suspects that these experiments were not frequently enough repeated on sound men, who never laboured under a gonorrhea.

This

* Critical Inquiry into the present state of surgery, p. 134. & seq.

This seems to be proved from the words of *Daran*, † who says, he has proved this truth by an experiment, which he promises himself a repetition of as often as thereafter required: he afterwards adds, that that experiment seems to be but of little use to him, as the truth of the assertion may sufficiently appear in that other, by which, as he affirms, the corrupted matter only adhered to that part of the bougie which touched the obstacle in the urethra.

That Sharp * might still elucidate this doubt, he persuaded some lads, from twelve to twenty years of age, to suffer the bougie to be introduced into their urethras; which, when afterwards drawn out, had a quantity of matter sticking to it, still greater from some than from others: but Sharp was sure that none of these, on whom he tried this experiment, ever had a gonorrhea. He left these bougies in the urethra, some six, five, four, or three hours. The author does not indeed describe the remedies, of which these bougies, which he used, were composed, for he simply calls them *Candelulas Mercuriales*: but he could not conceive how the corruption could be, in so short a space of time, produced in the sound urethra; from whence he concluded, that the matter sticking to the bougie, was not an ulcerous corruption, but a natural mucus discharged more copiously by the irritation of the bougie: but it may be opposed, that *Daran's* bougie was of far greater efficacy, as it produced no new corruption in the space of a few hours, but drew out the corruption lurking in the covered ulcer, cleared the ulcerous place, and healed it after it was, by this suppuration and excited flux, totally purified from the venereal virus. That *Sharp* might clear up this difficulty, he was certain, that he had by chance acquired a bougie, composed by *Daran's* method, which he tried in a sound

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† Observat. Chirug. sur les malad. de l'urethre, &c. Discours Prelimin. p. 35, 36,

* In loco modo citato. p. 140.

urethra, but it produced the same effect as his own bougies did in the first experiments of them.

But as Daran dispersed emissaries to distribute his bougies through the greatest cities of Europe, it was not difficult to try or compare them. From hence it may be justly concluded, that the state of an ulcer in the urethra, cannot be proved by the flowing of mucus or matter from the urethra, after the application of the bougie, as it may happen in the most sound of body.

That excellent man, *Sharp*, has certainly been very beneficial to mankind, in making these experiments upon sound persons free from all suspicions of a venereal contagion. It is but too well known, that many who in their youth have gratified their desires with furtive venery, are perpetually tormented with fear, that a fomes of the venereal contagion still lurks masked in some part of the body, which may break out and be active after a long course of years. Some noisy men cherish this fear, and easily persuade these unhappy persons that they must undergo a salivation, though not even the least trace of the disease appears, that they may be delivered of that fear. A rumour was afterwards spread abroad, that not only the most malignant consequences of a gonorrhea were certainly cured by these bougies, but that it could also in a few hours be discovered by the application of a bougie, whether that poisonous fomes, which may afterwards turn to a state of vigour, lurked in the body or not. Many persons used these bougies that they might be freed from all that dread; for Daran* absolutely affirmed, that his bougie left in the urethra of a sound man, during its due time, would be entirely clean, so that not the least particle of gliding or adhering strange matter could be perceptible to the sharpest eye on the bougie when drawn out. *Sans que l'œil le plus fin puisse*

* In loco modo citato ad literam c.

puisse s'appercevoir, qu'aucune liqueur etrangere s'y soit attachée. How alarming must a man's fears be, who tries this bougie upon himself after a former gonorrhea, especially when he finds a mucous string on it when drawn out ! he certainly will think himself infected ; and yet more so, if he finds such a mucous matter, but in one or two places only, and not adhering to the whole ambit of the bougie.

But if what has been said of the fabrick of the urethra, in Sect. 1447, be considered, it will plainly appear, that this may happen, as some wider orifices of the excretory ducts will open in the cavity of the urethra ; these being dilated, and sometimes corroded after a gonorrhea, discharge a greater quantity of mucus upon the injected bougie, in that place where they touch it. Something will again be said of this matter in Sect. 1459, where the cure of the gonorrhea will be treated of.

I never believed that *Daran* acted unfaithfully, and made a false representation ; but he seems to have concluded in too hasty a manner, that all that goes out of the penis, after the application of the bougies, is virulent matter, in which the venereal contagion certainly adheres : from whence he advises, that women be abstained from, during the flux after the application of the bougies, lest they should be infected. It is also known, that after a gonorrhea well cured, and all painful symptoms being removed, this disagreeable circumstance still remains, that, in the morning, after a good sleep, something spontaneously flows from the penis, or goes out by a light pressure in form of a pellucid kind of mucus : this is sometimes of a long standing, is particularly increased by excess in eating and drinking, and always strikes the patient with terror of some lurking poison. *Sharp* * observed, that husbands so affected, had cohabited with their wives, and had not infected them ; he

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even

* Critical Enquiry, &c. p. 142.

even affirms to have seen such cases productive of a great flux, without any subsequent infection: it seems also remarkable, that he used the term *suppuration*, whilst he displays that mucous flux following after a gonorrhea, which he in the precedent page called a gleet, and but a little before * had directed that it should go by the name of a suppuration, for explaining that flux which was excited by the bougie sticking in the urethra.

But Daran was of this opinion, that the venereal virus lurks in the urethra, in the very cavernous body of the urethra; which ulcerous place growing or projecting into a fungous substance, will be consumed by the application of the bougie, so that by a suppuration then bred, the venereal virus is to be extricated, and to flow out with the corruption: he also believed, that the venereal virus in the cellular or fungous substance of the urethra, where it remains inactive, and almost dormant, until roused to action by drunkenness, venery, or other accidental causes in that place which it adhered to, and every way distended, so that the channel of the urethra may first grow narrower, then be entirely stopt up, and a total ischuria be produced by it; but he attributed this power to his bougies, that they should open such an ulcer when shut up, clean and perfectly consolidate it when all the venereal virus was extirpated. Upon this supposition the contagion must be feared, if a husband cohabits with his wife in that time whilst the ulcer, before hid, is now opened by the virtue of the bougie, which should dissolve the contagious corruption, and render the former silent and sleepy venereal virus, now active.

Daran confirms his opinion by many observations, which may be read in his treatise of the diseases of the urethra. This amongst the rest is particularly remarkable, which an eminent surgeon mentions in writing an account of his own sufferings by this disease,

* Critical Enquiry, &c. p. 141.

ease, of which he affirms to have been cured by the virtue of this bougie.† He in his youth laboured under a gonorrhea, which was by every usual aid entirely cured; then, as he afterwards lived chaste, and exposed himself to no venereal danger, during twenty years, he believed himself entirely free from every evil of that disease; he therefore wondered at finding his urine at length flow out into a fine thread with much pain and difficulty; he being then a surgeon-major in the army, could not avoid riding, by which the evil still increased; for, as the army was marching into Italy, he was obliged to attend it; he then had no time to assist himself with proper remedies: being then obliged to bear the labours of his duty, and the inclemency of the weather in the mountains of Savoy, his illness daily increased, and was irritated to a strangury by these inconveniencies: this was attended by an excrementory viscous mucus, which he was obliged to press out with great pain: an ischuria succeeded this, and proved almost mortal, so that he was obliged to quit the field, and seek the best succour he could for his alarming evils: he therefore took care to have himself carried to Mountpellier, where he obtained so much ease from the skill and aid of the physicians there, that he not only thought of returning to the camp again, having recovered his strength, but also of being very beneficial to any of the soldiers, who might implore his aid in winter quarters. Whilst he was thus taken up with the thoughts of returning to the camp, he felt a slight tumour in the perineum, which soon increased into a lump as big as his fist, which when cut open, a hole was found in the urethra which the patient himself dilated after the first incision, that this evil should not degenerate into a fistula, that he might attend the camp which was not yet broke up for two months after: but in a short

† Daran sur les maladies de l'urethre, p. 96. & sequentibus.

short time after, an ischuria followed, and lasted for four days, in so threatening a manner, that he despaired of recovering from it; yet he escaped it, but a great quantity of viscous mucous matter purged from it, which must have been attended with great pain: yet losing all hopes of a cure, he went home to his friends, and felt the most cruel pains imaginable for six months: he began to use the bougies, as he testifies, with such good success, that he obtained perfect health, and so continued for a month or more whilst he was writing this account of his disorder.

It does not seem to follow from this account of his, that the venereal contagion had lurked for twenty years in the urethra, or that he could continue in so long a state of health, before it forcibly broke out again into activity, or give some other symptoms of its appearance during that interval of time: the foetid virus of this disease may stick a long time in the most inward recesses of the bones. It therefore must seem not so wonderful that it is only to be thence extricated with great difficulty, as the vital humours are but slowly moved there, and the oily parts of the marrow will afford a convenient nest to the retained contagion: but whilst it adheres there, it is injurious by pains in the bones, tumours, &c. and affords no obscure index of its presence; something more of which will be said hereafter. But it hardly seems credible, that the venereal virus could, for so many years, lurk entirely unactive, and give no index of its evil in the place it adhered to, either in the penis, its cavernous bodies, cavernous body of the urethra, or the rest of the whole body; for, whilst the penis is erected, it swells by the blood which is then infused into the cells of the cavernous bodies of it, and into that cavernous body of the urethra which is likewise filled with blood, before an ejection of the seed. All that blood which swells the penis, returns through the veins in a mass
of

of humours, which are dispersed throughout the whole body after an ejection of the seed; from hence the penis soon falls. Is it likely, that the lively hot agitated blood, still nourishing the infected fomes, immediately absorbed by all the veins, did not infect the body? Could not the venereal virus have inflamed or corroded the loculi in which it lurked, during the time of the œstrum? Can any probable cause be assigned to cause this dormant poison to shake off its long forgotten former habit of injury, and immediately produce such great and many evils?

The strangury and ischuria may proceed from many other causes, for which there is no necessity of having recourse to a venereal fomes, left for twenty years, by a cured gonorrhea, in the body. I believe what has been said in Sect. 1440, may appear sufficient to evince, that the antient physicians did not know the venereal disease, and yet such symptoms of it are read in *Hippocrates's* writings, as are at this very day received for prognostic signs of the caruncula bred in the urethra after a gonorrhea. In *Coacis Prænotionibus*,* after he had given the signs of the inflammation of the bladder, and pronounced it to be a dangerous disease, which might infect the patient from ten to fifteen years; we read the following opinion: *Quibus tuberculum est circa vesicam, quod Dysuriam inducit, quocumque situ decumbant, moleste se habent. Hujus autem solutio fit, pure erumpente.* “Whosoever has a little swelling or tubercle about the bladder, which brings on a dysuria, finds it painful and injurious in whatsoever position he is placed; but its dissolution and cure proceed from its breaking forth into corruption.” The text immediately going before teaches, that this Greek word *χηματισμός*, is to be understood concerning the situation of the sick body, where he treats of those afflicted with the stone, where he says, that

* No. 472, 473. Charter. tom. viii. p. 879.

that if these persons were placed in such a situation that the stone did not fall into the urinal passage, they urinate with more freedom. It was said, where the stone was treated of, that those so afflicted naturally put their bodies into various situations, to try to remove the stone from the orifice of the bladder; nay, they sometimes place themselves upon their heads, that the stone may glide backward and create a free discharge of urine: but in this text where the Greek word occurs, it is therefore manifestly to be understood of the changed position of the body.

From hence it appears, that *Hippocrates* had a knowledge of the cause of the dysuria and ischuria, viz. the little swelling or tuberculum round the bladder, or in its neighbouring parts; then he had treated a little before of the inflammation and suppuration of the bladder; but he also has given some prognostic signs by which the complaints caused by this swelling may be distinguished. Does it not appear, that *Hippocrates* here speaks of that part of the urethra which is surrounded by the prostatae, and which borders upon the bladder? Such a tumour bred in this glandular part, may be diminished for the time by pressing it, whilst the mass continues to increase, and at length fills the cavity of the urethra, in such a manner that the preceding dysuria may be followed by a perfect ischuria; whilst the manifest tumour is also driven into the perineum, which is sometimes broken outwardly: but then certainly the origin of the evil is in the neighbouring parts of the bladder, but adheres on the outside of the cavity of the urethra.

Hippocrates observed, that such an obstruction of urine is not only bred in the neighbouring parts of the bladder, on the outside the cavity of the urethra; but he in another place * says, that this swelling takes birth in the very cavity of the urethra. *Quibus in urethra tuberculum nascitur, eo*
sup-

* Aphor. Sect. IV. No. 82. Charter. tom. IX. p. 191.

suppurato, & rupto, solutio: “In whom a swelling breeds in the urethra, that being broken and suppurated, dissolves.” But, as the word *solutio*, a solution, is often applied for a benign removal of an inflammation, instead of *resolutio*, without a following suppuration, see Sect. 386, *Galen** argues or disputes, in his commentaries upon this text, whether there is no other way left for a dissolution, besides suppuration and rupture of the suppurated swelling, though such a swelling of the urethra most frequently turns to an abscess? He at length concludes, that it is most certainly true, that a cure is to be expected only from a suppuration, and a discharge of the corruption: whence it appears, that a kind removal of the inflammation is not to be understood by the word *solutio*, but only a taking away of the obstacle to the discharge of urine; for the acrid urine passes slowly through the urethra, and is with great labour forced out, whilst the cavity of the urethra is not yet entirely stopt; but where the dysuria degenerates into an ischuria, a perpetual tenesmus obliges the patient to endeavour to urinate with all his force; from whence the swelling is perpetually irritated, so that no hope of a kind resolution remains: the abscess stopping the urethra is sooner broken by all these forcible endeavours to discharge the urine.

That this is the true signification of the word *solutio* is confirmed by *Hippocrates* in another part;† for he has it thus: *Quibus in urethra tubercula procreantur, iis, suppuratis, & ruptis, dolor solvitur*: “Those who have these little swellings in the urethra, are released from pain when they are suppurated and broken.” It is therefore evident, that such evils were described by the ancients, who had no knowledge of the venereal disease, and even still they are ascribed

* Aphor. Sect. IV. No. 82. Charter. tom. IX. p. 191.

† Aphorism Sect. VII. No. 57. Charter. tom. IX. p. 323.

ascribed to the lurking venereal contagion. *Celsus* †, who turned the greatest part of Hippocrates into Latin gives us the following very remarkable sentence in his writings of these evils. *Quibus, in fistula urinæ, minuti abscessus, quos φήματα Græci vocant, esse ceperunt, iis, ubi pus ea parte profluxit, sanitas redditur. Ex quibus cum pleraque ex se proveniunt, scire licet, inter ea, quæ ars adhibet, naturam plurimum posse:*

“ To those who have small abscesses in the urinal
 “ pipe or urethra, which were by the Greeks called
 “ φήματα; when the corruption has flowed from
 “ them, their health is restored; from which and
 “ many more proofs, it is just to conclude, that
 “ nature operates most, even amongst those means
 “ applied by art.” As such evils therefore may
 arise from causes no way venereal, there certainly
 seems not to have been sufficient reason why the
 ischuria should be attributed to a gonorrhea per-
 fectly cured twenty years before: it is true that
Celsus here speaks of small abscesses, where a tumour,
 equal to the bigness of a man’s fist, was bred in
 the perineum of the surgeon, whose history we just
 now had; but the straitness of the place does not
 permit such an extension of the tumour in the ure-
 thra as in the perineum; but *Celsus* † had probably
 known such abscesses, which he termed small, in the
 urinal pipe, and could be extended to a great bulk,
 in other parts of the body where space is given;
 for thus he says, *Phyma vero nominatur tuberculum
 furunculo simile, sed rotundius & planius, sæpe etiam
 majus. Nam Furunculus ovi dimidii magnitudinem
 raro explet, nunquam excedit. Phyma etiam latius pa-
 tere consuevit; sed inflammatio, dolorque, sub eo mi-
 nores sunt:* “ The phyma, called a tuberculum,
 “ resembles a furunculus, but is rounder, flatter,
 “ and often greater; for the furunculus seldom
 “ reaches the magnitude of half an egg, and
 never

† De Medicina lib. ii. cap. viii. p. 70.

* Ibidem, lib. v. cap. xxviii. No 9. p. 325.

“ never exceeds it ; the phyma usually appears
 “ broader, but the inflammation and pain attending
 “ it are much less.”

Could not that ischuria have been formed in that surgeon, from a long habit of riding, rather than from a gonorrhea remaining cured during the whole space of twenty years ? Certainly *Hippocrates* remarks, that the *Scythians* * not only became dull in venery, from a perpetual custom of riding, but were finally rendered barren, and so effeminate that they employed themselves in the occupations of women, and also acquired their tone of voice ; their effeminacy was still yet more displayed by their custom of wearing women’s apparel, their manner of living and working like them. Also treating of their affairs, *Hippocrates* remarks, that the most opulent, and not the inferior people amongst the *Scythians*, were prone to this affection, but rather those who had acquired great riches by their excursions on horseback. *Pauperes minus affligit hoc malum ; non enim equitant* : “ The poor are less afflicted with this evil, “ for they do not ride.” Then he farther adds, *Quin & in reliquiis hominibus ad eundem se habet modum. Ubi enim plurimum, & creberrime, homines equitant, ibi plurimi cedmatis, ischiadibus, & podagris, corripuntur, & ad Venerem exercendam pessime se habent* : “ But the rest of mankind are affected in the “ same manner ; for those men that most frequently “ ride, are attacked with humours in their legs, “ coxendic and podagral pains, and are badly qualified for the exercise of venery.”

It may be concluded from these observations, that a long and frequent habit of riding may injure the genital parts of men, and produce various evils in them, on account of the perpetual shakes and uninterrupted pressure of the weight of the body, commonly sitting on the horse, as I have remarked upon

* In Libro de aëre locis & aquis cap. xi. Charter. tom. vi. p. 210.

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upon another occasion, in Sect. 1063, in these commentaries.

It is also to be remarked, that the Greek word *Κέδματα* does not always signify a pain in the joints, or defluxion of humours, especially near the hip, but a lasting and natural disposition, which occupies the genital parts;* for as Hippocrates, cited in the text just now quoted, that amongst the many evils to be dreaded from too much riding, together with the ischias, mentions *Cedmata*, and an impotency for venery; it seems probable, that he by this word rather intended to describe a disease of the genitals than of the joints. It is manifestly evident from what has been said, that the dysuria and ischuria, take not always their origin from the venereal disease, but from other various causes; and though even a person had laboured under a gonorrhea, and that some impediment in the urethra might have remained after it was cured, it should not be concluded, that the morbid virus could still so lurk in that part as to afford no hope of an entire cure, if not extricated and expelled from thence. The urethra may be contracted by hard and wrinkled scars of the ulcers healed in it, after some repeated gonorrheas; and the filaments placed transversely in the urethra, have sometimes obstructed the free secretion of urine, and produced an invincible resistance against the introduction of the catheter: all these evils may be the sad reliques of a venereal contagion, though that had been totally expelled from the body. Will not venereal ulcers leave contracted scars in the external skin, though they are entirely healed, or will any more spring up again in their neighbouring places? still nobody will readily promise the cure of these eschars, though any remedies may easily be applied to them. Let us suppose, that the urethra, rendered ulcerous by a gonorrhea, will be also in like manner affected; but whilst the cavity

* Vide Foësi Oecon. Hippoc. in litera K.

cavity of the urethra is straitened by tumours, there may be no evil in the urethra itself, as often happens when the prostatae swell by some other cause, so much efficacy ought then to be in the bougies, which are applied to the urethra, as that their medicinal power should insinuate itself into the excretory ducts of the prostatae, and dissolve the obstacle, so that a circulation of humours may be restored through their obstructed substance.

But such evils are usually taken for carunculas, and are treated in the same manner; an example of which appears in a letter from *Theodore de Mayerne* (king James the second's chief physician) to *Hildanus*,* concerning a nobleman, who was thought to have had a caruncula in the urethra after a gonorrhea, whose extension was terminated about the caput gallinaginis, which he found also swelled; but as the patient was not able to urine with using his utmost endeavours, and as it came out only by drops, Mayerne concluded, that this obstacle was to be gradually extirpated by cathartics, which he prudently essayed, still interposing the mildest of remedies, that the irritation caused by the corroding remedy might be eased, for he well knew *carunculæ curationem plus cunctando, quam festinando, promoveri*: "that the cure of the caruncula " is to be forwarded more by delay than a quick " pace;" but he says he profited so much by this method, *ut pateat regia seminis & urinæ via, atque amplo, continuo, recto, filo reddatur lotium*: "so as " to open the way for the seed and the urine, that " its discharge could be made in a full, direct, and " continual stream."

The channel of the urethra was indeed free, but there remained an oblong ulcer, which, considering the part, was rather large, and could not be brought to an eschar, as the patient was obliged to leave Eng-
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* Epist. Centur. No. 100. Hildani opera omni. p. 1032.

land upon some public affairs, the cure was still left to be perfected: *Mayerne* therefore committed him to the care of *Hildanus*, and after adds, *Ut facias Excretici nostri periculum, ejusdem tantillum mitti quod tamen sit ad quatuor ingentes carunculas penetrandas, & exequandas, satis; si tardius opus perfecerit, animum non despondeas. Tuto, & jucundo, operari satius, quam cito, & cum periculo. Vanus nunquam erit medicamenti effectus; quem tamen accelerabis per libitu, Mercurii præcipitati rubri additione*: “Thou mayest
 “you may make a trial of my excretics, I fear not
 “you as much of it as may yet sufficiently serve
 “for penetrating and erasing four great carunculae
 “do not despair of success, though it should be
 “slowly perfect the work, for it is better sufficient
 “to operate with pleasure and safety, than with
 “speed and danger. The effect of the medicament
 “will never fail; yet you will hasten it at will by
 “the addition of red precipitate of mercury.”

But it appears in another letter from *Hildanus* concerning this same patient, that the evil was in no manner amended by him, as the ulcer in the urethra still remained to be brought to an escar, as *Mayerne* believed; for the noble patient at his return into Switzerland complained of a scalding and retentive of urine, which still oppressed him: these evils were indeed soon eased by the application of emulsion of glisters, and bougies, but he began to feel shooting pain in the left part of the perineum, though not yet indeed acute, but yet constant; but whenever he might have transgressed his rule of diet and exceeded his manner of exercise, he perceived a remarkable stench in his urine, together with a sediment of viscous matter, not unlike the sperm of frogs: this complaint was relieved by bleeding, emulsions, &c. he was observed to be very much assisted by drinking of whey and sugar; but this cessation of mischief was very short lived: he was seized

seize

seized with a continual burning fever, a retention of urine, an inflammatory tumour in the perineum as big as a goose's egg, with racking pain, together with a tumour and hardness of the scrotum and penis; he had a syncope, and all the worst of symptoms, which were by all believed to be the messengers of death: the abscess in the middle of the perineum at length broke, and yielded corruption of a more intolerable stench than that of a dead carcass; almost the whole perineum mortified and fell away, and a great ulcer remained there, which was at length purged and healed by the skill of Hildanus, without any remaining fistula; the sphincter of the bladder also remained so safe and entire, that he could contain his urine even in the very vigour of such an evil.

These following circumstances affirmed by *Hildanus* * particularly merit attention; *Ulcus nihilominus, quod deorsum versus Vesicam tendebat, profundum erat, & ad ipsas Prostatas, quas ego a longo tempore male affectas existimo, tendebat*: "Notwithstanding, the ulcer which tended downwards towards the bladder was deep, and tended toward the prostatae, which I suppose to have been severely affected for a length of time."

If the obstacle forming the dysuria and ischuria, should adhere to the cavity of the urethra, local remedies may be laid to the place affected by the assistance of the bougies, which should be varied in proportion to the variety of the evil; but it is also an object of great caution, that the corroding force of the remedy be applied to the affected, and not to the sound part of the urethra: so some physicians have introduced such remedies, through a silver pipe, unto the obstacle in the cavity of the urethra, as could dissolve or consume the fungous flesh, and obtain a free passage for the urine. It appears that

* Oper. omn. Centur. V. observat. 64. p. 456.

such remedies should be chosen so as not to be of a fluent nature, lest they should offend the sound neighbouring part, and produce a dangerous inflammation: it also appears, that there is a necessity that different remedies be applied by the skilful in this art, according to the changeable state of the obstacle which is to be removed. Other remedies are required for carrying venereal and often callous warts away, than if it were luxuriant, soft, fungous flesh, which obstructs the cavity of the urethra: the most skilful of the faculty, at this day, agree in this, that the more acrid and corroding remedies are not to be applied, as it is manifest by what has been already said, that they were formerly attempted. That cruel method of rasping or filing away the obstacle is likewise condemned. I have seen some excellent surgeons, who when they believed a fungous caruncula to be the cause of an ischuria, had filled the oblong holes on either side of the catheter, near the point of it, with soft fresh butter, lest the fungous flesh should enter into them and be torn, whilst the catheter enters the urethra to discharge the bladder; for whilst the catheter adheres there, the butter immediately dissolves by the heat of the place, and the urine freely flows.

But when the cause of the ischuria adheres without-side the cavity of the urethra, can this evil then be healed by the medicinal bougies in the cavity of the urethra? it is scarcely probable. *Daran* himself candidly acknowledges,* that his candles or bougies operate but in those parts which can be immediately touched by them; so that neither the prostaticæ, the feminal vessels, nor the bladder itself, can be these parts: he also gives the following diagnostic signs, which point out where the evil adheres; if corruption precedes the urine, an ulcer lies in the cavity of the urethra, and the urine drives forth that collected corruption which adhered in the channel of the

* Sur les Malad. d'urèthre Disc. Prælim. p. 185.

the urethra; but if corruption follows the expelled urine, by that endeavour by which the last drops of urine are forced out from sound persons, the corruption was not then in the channel of the urethra, but derived from the prostatae into the channel of the urethra, by the force used in ejecting the urine; besides, there is an obtuse pain felt, if the perineum is pressed in that part where the prostatae are placed. In such an evil he has less to hope for from the effect of his remedy, though he believes it can operate upon the excretory ducts of those parts, which empty their humours into the channel of the urethra, so that these same parts may be restored to their entire state also; but when there is a more inveterate ulcer of the prostatae already fixed, or when of a more malignant nature, so as to have destroyed the substance of them, then he is of opinion, that a cure cannot be made by the bougie.

The only hope then remaining is, to use as many exterior remedies as are necessary, having first pierced the affected place in the perineum, which, if not done, the neighbouring parts are all corroded, and the most shocking evils follow, as appears from the case just now related. I have seen the most deplorable specimens of such evils often bred from neglected or ill-treated gonorrheas.

Various were the applications and remedies for freeing the urethra from these obstacles, which were by many others taken for a fungous substance, growing from the internal superficies of the urethra; hence such remedies, as were approved of for taking away such-like excrescent carnosities from the external parts of the body, were applied; yet the more prudent applied such as could not injure that sensible part; or if they sometimes attempted the application of more acrid remedies, they were excessively cautious that they should operate but on the caruncula, and not on its neighbouring sound places: but as many were

of opinion, that these evils always lie under the lurking venereal virus in the place affected, they preferred corrosive mercurials to the rest; but still of a milder nature, such as *mercurius præcipitatus albus*, *mercurius dulcis*, &c. the power of all which may be infringed at will, if needful, to diminish the quantity or to roll them up mixed in plasters of a fatter kind, that they may more mildly operate.

Some others were more willing to attempt a cure by crude mercury; as that excites no pain, particularly if it is agitated into a vapour by a quick fire: so *Chevalier* * affirms, that he sometimes cured by the vapour of mercury, poured into the urethra by the help of a funnel, and that this method is preferable to that of the bougie, which always creates more or less pain and damage.

That famous surgeon *Sharp*, † preferred crude mercury to all other mercurial preparations; but he ordered that to be first subdued and killed by *balsam of sulphur*, to be well mixed with *diachylon*, to which he added a little *Burgundy pitch*, that the plaster may be more tenacious; and he added a part of *crude antimony* finely ground and passed through a sieve, not so as to augment the force of the remedy, but so as to beget a firmer consistency and a better polish for the superficies of the bougies which are to be prepared from thence; the proportion of these ingredients was thus: *Diachyli Emplastri una cum addita Pice Burgundica, partes quatuor; Argenti vivi partes duas, Antimonii crudi partem unam*; “ The plaster of diachylon, together
“ with the addition of Burgundy pitch four parts
“ two of quicksilver, and one of crude antimony.” He also describes how these ingredients should be mixed with each other, together with the method of making the bougies; he afterwards adds all the
precau

* Lettres a M. de Jean sur les maladies de St. Domingue &c. p. 91.

† Critical Enquiry, &c. p. 174, & seq.

precautions which should be observed in the use and application of these bougies.

But as it has been said before that such an impediment in the urethra may be bred from a constriction of the urethra alone, many have attempted to dilate the urethra with leaden probes, by gradually increasing their thickness that this required distension may be accomplished;* others made use of whalebone, &c. as they feared that the leaden probes might sometimes be broken, which might easily happen if they were of the smallest size, or even of the thickest, if dipped in quicksilver before they were introduced to the urethra, as usually happens to some of them, not only in distending the urethra, but through the mercurial power which operates upon them. It is known, that lead is easily to be pierced by quicksilver, which renders it brittle; so such leaden probes become fragile and are easily broken in attempting to thrust them into the urethra; such a fragment left there, can hardly be extricated without cutting, except it can be dissolved. We read a remarkable case of this kind † in a letter, wrote by the famous surgeon *Le Dran*, to the authors of the *Diarium Eruditorum*: a part of a leaden probe four inches and an half long, and weighing six drams, was so broken, and slipped into a man's bladder; he every where consulted the most skilful physicians and surgeons, who were of an unanimous opinion, that its extraction or cure could not be attempted without an incision, which they exhorted the patient to undergo, and that some greater evil might be caused by it. Where the stone was before treated of, it has been proved by many observations, that an indissolvable body adhering in the bladder, may form a base on which the stony matter, still growing and appearing in the urine of

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even

* Critical Enquiry, &c. p. 149.

† Journal des Scavans. Mars 1750 p. 144.

even the foundest persons, may form a stone of an immense bulk ; from whence it was concluded, that the operation was not to be delayed very long. *Le Dran* thought otherwise, and undertook to render the lead left in the bladder as fluid as quicksilver ; he tried many experiments for that purpose even on live animals ; and so he saw that the lead sticking in the bladder, could be reduced to a fluid without any damage ; what is still more, he introduced a lump of lead into another man's bladder in the sick man's house, then made him lie down whilst he dissolved it into a fluid ; this experiment gave the patient more satisfactory hopes of his cure, which *Le Dran* perfected in the space of eight days ; for he rendered the lead so fluent by injections into the bladder, that it could run out ; then having brought it to a solid mass again, he delivered it to the patient : he wrote this letter in eight days after this cure was perfected. The author conceals that dissolving remedy, by which he performed this cure ; but a just suspicion must immediately arise to the reader, that quicksilver was applied for perfecting this dissolution ; but it is confirmed by this which the author affirms, that this dissolving remedy cannot operate upon a stone in the bladder, but yet may be of great use in dissolving of leaden balls which a surgeon's dexterity cannot extract, whilst the wounds they make in certain parts of the body are healed, and they remain, and sometimes give the patient great pain.

I at that same time received a letter from the learned doctor *R. Sanchez*, who leads an honourable life in the ease of literature in Paris, after quitting the office of chief physician to the empress of Russia, which he bore with great reputation, and then returned to the muses and his friends ; he in this letter testifies, that the famous Sharp, whom I so often mentioned, had discovered in London, that an ounce of quicksilver, brought into an amalgama
with

with half a dram of bismuth, and injected into the bladder, had dissolved some lead sticking in the cavity of it.

It appears from all these observations, that these obstacles, bred in the urethra, were tried by a great variety of remedies, and indeed with various events too; nor will these varieties easily come to a period, whilst every one extols his own as preferable to all others; but no judgment can be formed of these unless the medicines are described. This Sharp candidly did, as hath been said, and I have heard from men worthy of credit, that these bougies have been applied with the like success as those which *Daran* so solicitously concealed, and which an anonymous English author * had endeavoured to guess at, for he puts the soles of shoes burned amongst his ingredients. Let the credit remain with the author.

The famous surgeon *Goulard* † used an *extract* of *Saturnus* or lead, as he calls it, which is a solution of lithargyrium plentifully saturated with wine vinegar: he mixes an ounce and a half of this liquor with a pound of wax dissolved over a slow fire, then dipped some linen cloth in this mixture, of which he made his bougies; if the harder obstacles yield not to a second trial, let the quantity of the extract of saturn be augmented, until the wished-for success is acquired: he confirms the utility of this remedy by many more observations.

* Theor. and Practice of Chirurgical Pharmacy, London, 1761. 8vo, p. 224. & seq.

† Remarques & observat. Pratiq. sur les Malad. Vener. &c. p. 317, & seq.

S E C T. MCCCCCLII.

HENCE this disease, conveyed to the limbs, creates nocturnal pains, which occupy the middle arteries, as it also renders the flexible parts stiff and rigid.

It appears from what has been said in the precedent sections, that the virus of the venereal disease is sometimes absorbed by the blood, in the very moment of infection, then moved through all parts of the body, when mixed with the circulating humours, and afterwards deposited in different places; hence, and from the diversity of places in which it is deposited, it produces many evils.

But that virus is more frequently accustomed to fix its seat in viscous fat and mucous humours in the genital parts, and when that poison gains dominion over the humours of the soundest body, as they flow to the place affected, it assimilates them so much to itself, that they also become contagious: wherefore it appears, that, in process of time, the whole body may become infected from a small venereal ulcer; which is observed to happen from this inveterate evil, as demonstrated by many more observations in Sect. 1445.

Those evils which are usually formed by the Lues in the external superficies of the body have been enumerated and described in Sect. 1444, 1445, 1446. It also appears from these sections, that the most violent diseases are sometimes produced in the bowels from this cause; but there has been enough said in the following sections concerning the diseases bred in the genital parts by this disease.

It now follows, that something be said of those evils, which are observed whilst this foul disease fixes
its

its seat in the arteries, and occupies the tendons, membranes, ligaments, and the very bones, which so often happens in an inveterate Lues.

It has been amply demonstrated before, that the tunica cellulosa is distributed throughout the whole body, all the bowels interposed, not only through the muscles, but that it surrounds them, that it has also a place between the fasciculi of the muscular fibres, and involves every one of them. The poison of the disease used to be entangled with fat and mucous humours, it opens an easy way to the very bones, and the marrow also; from whence the most terrible evils usually follow, as will appear in the following observations.

Pains in the bones generally accompany an adult Lues, a recent one but seldom; as will be also mentioned in Sect. 1467, by the signs which are to be taken for a confirmed Lues, which requires a powerful method of cure; but at that time when this disease spread throughout Europe, and also at the beginning of it, the patients were excruciated by these pains. So we read in a little book of the venereal disease, wrote by *Gasparus Torella* * in the year 1497, concerning *Nicholas Minor Valentine*, a youth of twenty-four years of age, who having connection with a woman labouring with a pudendagra, was that same day infected. *Infectio incepit apparere in virga, uti solet ut plurimum aliis evenire: nam sequenti die apparuit ulcus in virga, cum quadam duritie longa, tendente versus inguina, ad modum radii, cum sorditie, & virulentia. Post sex dies, ulcere semicurato, correptus fuit intensissimis doloribus capitis, colli, spatularum, brachiorum, tibiarum, & costarum; & præsertim in eorum musculis; cum maximis vigiliis, a quibus molestabatur non nisi in nocte post primum somnum:* “ The infection began to appear in his penis, as it commonly happens to others, for an ulcer appeared there the day following, with a
“ certain

* Aphrodisiac. p. 545, 546.

“ certain long hardness tending towards the groin,
 “ in the manner of a radius with filth and vi-
 “ rulence ; the ulcer being half cured in six
 “ days after, he was seized with racking pains in
 “ the head, neck, shoulders, arms, shin-bones, and
 “ ribs, and especially in their muscles ; all which
 “ were attended with a great privation of sleep ;
 “ but these pains never attacked him but by night
 “ after his first sleep.” In ten days after, many
 pustules appeared on his face, neck, and head, nor
 did the evil appear to be lightened by the eruption
 of these pustules, for they and the pains remained,
 nor did they increase or diminish during the space
 of two months, and some nodosities grew up in his
 members.

Another man of twenty-four years of age,* in
 thirty days after an infection of the penis, and sud-
 denly after a long sleep, had his whole body in-
 fected with broad red spots without pustules. *Elapsis*
quinque diebus, fuit correptus doloribus intensis capitis,
colli, spatularum. Maculæ vero inceperunt cortices ad
modum furfuris emittere. Postremo multiplicati sunt
dolores per totum corpus, infestantes eum in nocte, &
non in die. “ Five days having elapsed, he was
 “ seized with intense pains in the head, neck, and
 “ shoulders, but the spots began to shed some skins
 “ or scales like bran ; the pains at length multi-
 “ plied throughout the whole body, and infested
 “ him by night but not by day.” In another pa-
 tient,† the disease began with the pains : having at
 length exercised himself very laboriously every day
 for two months, in that hour of night at which he
 was usually molested with pains from his head to his
 heels, gross crusty cinder-like pustules broke forth,
 which eased his pains.

It appears from this groupe of symptoms, that
 the virus of the Lues, when mixed with humours,
 affects various places of the body, nor is it soon
 fixed

* Aphrodisiac. p. 547.

† Ibidem, p. 550.

fixed in any certain place, but wanders through different parts, whose functions it disturbs as it changes its place. It oftner happens, at this day, that the pains are eased when spots and pustules suddenly appear in the skin; and vice versa; for when it once adheres fixed in the bones, the pains are not then carried away by a removal of matter to another place, but obstinately adhere there: but it has been constantly held, from the infancy of this disease even to these times, that these very tormenting pains afflict the patient by night, but are remarkably diminished in the day-time, and even cease entirely sometimes.

Sydenham described the progress of the venereal disease * by a drawing, and distinguished these wandering pains from the first ones. *Dolores, tum caput, tum artus in articulorum interstitiis, humeros scilicet, brachia, & talos, crudeliter laniant, nullo ordine invadentes, & per intervalla, licet noctu ægrum, lectuli calore perfusum, rarissime destituant, nec nisi sub auro-ram libenter evanescent*: “ These pains thus invading the head, now and then the arteries in the
“ intervals of the joints of the shoulders, arms, and
“ ancles, cruelly rack them without any order, and
“ very seldom forsake the patient at any interval by
“ night, though lull’d by the heat of the bed, nor
“ do they freely vanish until the break of day.” But he also remarks, that the pains are lightened if the skin be spotted with crusty scales, scurf, and pimples, such as commonly proceed from a leprosy; so that the more skin thus torn, the less the patient is tormented: but this release is not lasting, *nam universa symptomata pedetentim incrudescunt, dolor præ reliquis, qui tandem eo usque exacerbatur, ut se nequeat miser in lecto continere, sed, protinus exiliens, huc illuc in cubiculo cursitet, irrequietus ferme, donec illucescat*: “ for all the symptoms gradually increase,
“ particularly the pain before all others; the mi-
“ serable patient tormented with that, cannot con-
“ tain

* Epistol. ii. responsor. p. 416.

tain himself in bed, but continually stamps about the room until day-light." For the evil then adheres fixed in the bones, which are raised into hard knobs, swellings and knots, which become carious, and afterwards produce cancerous ulcers of a most malignant nature in the part affected, &c.

S E C T. MCCCCLIII.

FR O M hence the cartilages, principally those of the nose and palate of the mouth, are corroded.

It is known that the extremities of the joints of the bones which receive, and are to be received by the cartilage or gristle, are incrustated by it, and covered by fat humours; from whence an easy motion of the joints is obtained. That articular smegma, gives a convenient nest to the venereal virus, and produces the worst of evils. Such degenerations of the bone about the articulations were often observed, and I myself have seen them in the dead bodies of some sufferers by this disease.

The gristles, corroded by the venereal disease, are chiefly those of the nose and palate of the mouth, which afterwards bear an incurable deformity. It is to be added, that the venereal disease is exceeding difficult to be extricated from these places, as known by all who are habituated to the cure of this disease.

But these evils were before mentioned in Section 1445.

S E C T. MCCCCLIV.

THIS disease presently occupies the middle parts of the bones, and produces a caries, especially in the cranium.

When enormous pains arise amidst the bones of the cranium, or in the middle of the thickest parts of the greater bones, and if the horizontal spreading knittings, or joinings of these bones be divided, or as if about bursting asunder, and these beginning after the setting of the sun, bring on intolerable pains in a slow pace until midnight, and then constrain the tormented patient to quit his bed, until they spontaneously grow more tolerable towards the dawn of day, we are then certain that the evil already adheres to the fat of the bones.*

But since the diploë of the bones of the cranium executes the office of the marrow, thence these foul evils occur so often in the head; for it is observed, that the venereal disease more frequently affects the head than any other part of the body, though even whilst the virus of this disease received by the genital parts, is dispersed by an universal mass of humours, and afterwards deposited in various parts, which it slowly wastes away with purulent matter.

Fernelius excellently remarks,† the signs by which gouty pains are distinguished from those which are venereal. *Arthritis enim brevi parvoque tempore exoritur, idque ex defluxione, quæ repente in articulum incubuit. Dolores vero Luis Venereæ sensim procedunt, multoque tempore, ab eo excremento, quod pars male affecta paulatim congeffit. Ad hæc, arthritis in articulo, aut circa hunc, consistit, fixaque est. Dolores ex Luis non articulos, sed medios artus, obsident; in quibus & plerumque topi concrefcunt; maxime vero in fronte,*

* Aphrodisiac. In Præfatione.

† Ibidem, p. 614.

fronte, & capite, in clavibus, in medio humeri osse, in medio cubiti radio, & in parte priori tibiæ; nonnunquam & in aliis quoque ossibus: “ For the gout is
 “ bred in a short and little time, and that from a
 “ defluxion which suddenly falls upon the joint;
 “ but the pains of the venereal disease proceed gra-
 “ dually, and in a long course of time, from that
 “ excrement which the part affected had by degrees
 “ assembled; and this gout is fixed, whether it con-
 “ sists in the joint or about it. The venereal pains
 “ attack not the joints, but their intermediate liga-
 “ ments, in which and for the most part the tophi
 “ grow, but mostly in the forehead, head, amidst
 “ the shoulder-bones, elbows, in the upper part
 “ of the shin-bone, and sometimes in other bones
 “ also.”

Besides, the venereal pains have this property, that they are not increased by the tact, but are very often eased by a strong pressure on the parts ag-
 grievèd; whilst the gouty patient cannot at all bear to be touched on the affected place, particularly in any rude manner; but by this it is to be under-
 stood, before that the bones are raised into hard tophi, for they become painful at a ruder tact.

S E C T. MCCCCLV.

AN D then, upon the parts placed upon these bones, arise imposthumes of the worst nature.

The surgeons know how difficult it is to cure those evils which have their origin from an infected bone. If the bone has been affected by an external injury, after wounds, suppurations, &c. indeed the cure proceeds more slowly, but still succeeds, as the way for corrupted humours easily lies open through these
 soft

soft incumbent parts, whose union is in like manner dissolved; but when these superposed soft parts degenerate into malignant ulcers, after those nocturnal pains, it is justly to be feared, that the marrow of the bones was destroyed before the soft parts could be affected. It has been seen that bones were already entirely eaten by a caries, though the incumbent soft parts still remained whole; just as if a man's thigh-bone should be broke in taking off his garters. If the bones of the cranium, after having a long time laboured under an intolerable cephalagia, should be so corroded, how great and many are the threatening evils attending them! See the observations already cited in Sect. 1445, where such bad cases are enumerated. These observations made by *Joannes de Vigo* * in his works, which he began to collect in the year 1503, and published in the year 1513, deserve to be read; but since he was surgeon to pope *Julius the second*, he without doubt saw the venereal disease whilst it first appeared in Europe. The disease began from pustules of the genitals in both sexes, which were afterwards dispersed throughout the whole body. *Interdum cum venetis pustulis, vel saltem post earum ortum inde ad mentem cum dimidio, vel circa, patiens laborabat doloribus clamosis, interdum circa frontem, interdum in spatulis, & humeris, & brachiis, & aliquando in tibiis, coxis, & anclis. A quibus doloribus aliquando multum post tempus, videlicet post annum & ultra, quædam orientantur schirrositates, ad instar ossium, a quibus ægro-antes clamoris doloribus vexabantur, præsertim tempore noctis, & sedabantur in die, &c.* “ Sometimes through the aforesaid pustules, or in a month and a half, or thereabouts, after their rise, a patient laboured with alarming pains, sometimes about his forehead, blade-bones, shoulders, arms, shin-bones, hips, knees, and ancles, from

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* Aphrodisiac. in Præfat. p. 449, 450.

“ all which pains, having lasted above a year and
 “ a half, schirrous swellings arose on the bones, by
 “ which the sick are tormented with lamentable
 “ pains, especially in the night-time, and are eased
 “ in the day,” &c. But these pains always terminated in the corrupting or destroying of a bone, as it happened in the spina ventosa. *Transacto vero anno cum dimidio, vel circa, quædam tuberositates exiturales, materia grossa & phlegmatica plenæ, ad modum non parvæ castaneæ, albi coloris, substantiæ duræ ad instar chordæ, aut nervi semiputrefacti, generabantur, quarum maturatio a natura tantum, absque auxilio alicujus medelæ, plerumque faciliter efficiebatur. Qua de re, post earum crepaturam, seu apertionem, omne genus ulcerum videbatur, &c.* “ But the year
 “ and a half, or thereabouts, being elapsed, some
 “ little swellings, not less than a chesnut, of a white
 “ colour, and full of gross phlegmatic matter, and
 “ of a hard substance like a cord, or a half-putrified nerve, were generated, their maturity was
 “ easily affected by nature, without the aid of any
 “ medicine; from which matter every kind of ulcer was seen after these had cracked or opened,”
 &c.

He afterwards displays this matter more amply in enumerating the various kinds of evils attending ulcers; and proves, that every species of pain, every foulness of the skin, and all the diversities of ulcers, concur in this disease: and he farther adds, *Ultimo loco vidimus, febriculam oriri, quæ tot prænominatis malis hominem quasi ad ethicam, aut ad ultimam ejus diem, conducebat:* “ In the last place we saw a fever
 “ arise, which, with the forementioned evils, almost
 “ conducted the man to his last day.”

S E C T. MCCCCLVI.

BUT the venereal disease raises hard tophi on these incumbent parts, which are almost void of pain, but gradually grow more acute, and then putrify these incumbent parts.

The venereal disease, as hath appeared, very often infects the bones, and destroys them with a real caries; it sometimes acts more slowly in the bones, and raises them gradually into hard tumours, which hold out a long time before a caries follows; these are insensible, but yet the pain slowly increases, according to custom, by an approaching or an increased corruption of the swelling bone, which afterwards corrupts the soft incumbent parts also, from whence all the evils mentioned in the precedent section arise.

But these most racking osteocopal pains thus provoked by night, precede those tophi. These tumours are bred in the middle parts of the bones, they are sometimes so soft, tough, and tenacious, that they yield to the pressure of a finger, and they are called *gummi*, or *gummata*, because they may be aptly compared to gum already still distilling from the bark of a tree, but not yet so much hardened as to become fragil, though dried by the air; if these are of a harder substance, and scarcely sink any more under the pressure of a finger, they are called *tophi*; but when they grow entirely hard and ossified, they are then usually termed *exostoses*, and *hyperostoses*, if the whole substance of the bone swells in that place, or if such a hard tumour should as it were besiege so much of the bone. *Ten Rhyne* †

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saw

† Dissertat. de Arthrit, part. ii. p. 64.

aw such a tophus besieging the shin-bone of a sailor, of twenty-five years of age, who was infested by the venereal disease, and believed those tormenting pains he suffered to be those of the gout, which this hardy species of men must often suffer, by being exposed night and day to the inclemencies or injuries of the air. Whilst he busily applied himself to his marine labours barefooted, the tophus, in being roughly rubbed by a running rope, broke open: a surgeon cut open the place; having then worked away the periosteum with his cutting and searing instruments, he endeavoured to destroy the evil, with great torment, but of no use to the patient. Examining then the place more attentively, he found a small hole which hardly admitted the point of a probe; he cut the lamina of the bone with a trepan, so made a way into the cavity of the shin-bone, and saw that the marrow had there degenerated as it were into a fungous flesh, excessively sensible: he afterwards used the same method which is usually to be applied to the fractured bones of the cranium; then having devised a cure for the venereal disease, the patient grew well.

This observation confirms the opinion, that such topi are first raised by the affected bone, and are often from thence very difficult to be cured.

Such tumours sometimes adhere in certain places, where they cause the greatest plague; a remarkable example of which I have seen. A man of thirty-three years of age, who frequented the Indies, had impure connections with an Indian woman, from whom he contracted a gonorrhea, which he attempted to cure with *oil of juniper*, *balsam copayba*, and some other such very hot medicines; a phymosis followed, with a tumour swelling the veins round the testicles, and the gonorrhea obstinately remained afterwards for a whole year: it then began to diminish, but presently a large buboe sprung up in the
right

right groin, which was cut open with a knife, and cured in India: some fissures or cracks of the skin succeeded, with great pain and injury in his hands and feet, and as he was returning to his own country, in four years after the first infection, these cracks began to diminish gradually as he approached Holland; they were healed in a short time on returning to his friends. But the dire traces of the filthy Lues still remained as well in and about his jaws, as in divers bones of his body. Amongst the other evils which afflicted him, a large tophus, not changing the colour of the integument, adhered under the muscle of the left temple; such another, but yet less, lurked under the right temple; from whence the unhappy patient could not move his mouth or jaws, so that his life was sustained by potage or broth only, until he at length perished by a dropsy, which sprang from all those other evils he suffered.

S E C T. MCCCCLVII.

F R O M whence the signs are easily discovered by which this disorder is known.

Unless I am deceived in these remarks hitherto mentioned, the signs which indicate the existence of this venereal disease in the body, are therein contained; and also those effects which attend the different parts of the body affected by this disease. I have also sedulously endeavoured to know what was to be hoped and feared from it, through a changeable habit of body, the various intensity of the contagion, its more recent or inveterate state in the body, those places or those parts it occupied, corroded, destroyed, and the diversity of evils that follow,

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together with the facility or difficulty of their cure.

Therefore as the diagnostic and prognostic signs of the Lues have been treated of, it now follows that its cure should be also treated of.

I will sincerely mention those remedies which I have observed in curing this disease; those which I have known to be safe and real; I will praise those men by whom I might have profited; I will shew the reasons which induced me to prefer some certain medicines and remedies to others. I find myself fully disposed to follow the best methods, as soon as I know them; until that good fortune happens to me, I will use my own.

S E C T. MCCCCLVIII.

A Gonorrhea is cured by bathing, fomentation, an injection, a mercurial purgation often repeated, emulsions, balsams, an abstinence from all strong savory meat and drink stimulating to venery, and on the other hand from poor and meagre victuals and drink.

The general indication in curing those evils bred by a reception of the venereal contagion, particularly consists in this, that the contagious virus be removed as soon as possible from the place it adheres to, and be expelled from the body, that it should no farther injure the part it occupies, nor be propagated in the neighbouring or yet remoter parts of the body.

Various are the effects to be feared from the Lues, according to the diversity of the places affected and contagious matter, the greater or less exciting heat, and the different constitution of the infected body, as hath been observed in Sect. 1444.

But

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But the venereal virus manifests itself usually in that place to which it first adheres: in a soft inflammation, a whitish, scaly, corroding, mucous pustule, which obstinately resists all common remedies, and afterwards distils a foetid, mucous, flow, greenish, corroding filthy corruption, and then the evil spreads rather in breadth than in depth.

If it should adhere to the external part of the yard, the place affected is called a *shanker*, on account of the difficulty of its cure. If it should attack the interior side, such a corruption flows sooner or later from the urethra, and then it is called a *gonorrhea*, which is distinguished by many kinds, in regard to the diversity of the place it occupies, in the whole course of the urethra and adjacent parts, or the discharge of its humours into the hollow channel of the urethra, which the contagion of the Lues had infected. That these evils may be exactly known, an anatomical cognizance of these parts is absolutely required; from which these various and most tedious evils, sometimes accompanying or following a gonorrhea, can be understood. All these have been already described in Sect. 1447, and in what followed: it now follows that the cure of the gonorrhea be discussed.

By bathing, fomentation.] The chief attention is to be applied to purging out the infected virus, that a free and easy discharge may be obtained for the flowing matter: hence the more prudent physicians endeavour to obtain this by baths and fomentations, as they perpetually moisten and warm the parts, so that the received virus may be allured to flow out with all the corruption it formed.

Emollient herbs, added to flour and soft antiseptics, are proper materials for the bath and fomentation. Such a prescription is given in the *Materia Medica*, thus; Leaves of *mallows* are for the emollients, and a composition of *rue*, *scordium* and *garlick* for the antiseptics; to which are added, a little

Venetian soap and spirits of wine: the quantity of the emollients, as well as the antiseptics, may be augmented at will, according as a more or less detergent remedy may be desired: of such materials pultices or plasters may be formed, to be laid on these parts: to these is usually added a little *linseed oil*, that this pultice may not dry too soon. Very great care must be taken that no corruption may be collected between the prepuce and the glans, nor make any stay there, for from thence a new infection, and corrosion of the glans, and inside of the prepuce, a phymosis and other evils are to be feared: hence let the ablution be diligently made, and the glans be wrapped up in the emollient and lightly antiseptic pultice, whilst the prepuce is withdrawn, for they draw the matter outwards: this washing and cleansing should be often repeated in the day-time.

I must confess, that it is very incommodious to those who are in public offices, or not at their own liberty, to attend those frequent cleansings in the day, without giving some suspicion of the lurking evil to those from whose knowledge of it they most anxiously desire to conceal it. I have advised such persons to steep the penis in a vessel fill'd with an equal quantity of new milk and water, in which a little Venetian soap had been dissolved, then to wipe it gently, so as not to irritate the sensible parts of it; after this cleansing, let a soft *plaster of mucilaginous drugs*, or of *melilot*, or such like, be applied to the naked glans when the prepuce is withdrawn; for though the baths, fomentations, and pultices ought to be used first, yet these through urgent necessity may be applied in the place of them.*

The votaries to Venus and the brothel houses repose great hopes of impunity in an immediate washing of the genitals after coition.

By

By injection.] A careful and frequent ablution and cleansing are particularly useful and necessary in that species of the gonorrhea (see Sect. 1447), where the corruption as it were exudes from the glans through its substance, and is collected under the prepuce; and also when the seat of the gonorrhea is not very distant from the orifice of the urethra; but when the seat of the evil is more distant, these fomentations and baths reach not the affected place directly, though they are of use for cleansing away the corruption of the gonorrhea, which distils from the urethra, and is collected between the prepuce and the glans: hence many others who have applied themselves to curing this disease, thought it would be of great service to apply such-like remedies as are oftner injected through a tunnel into the urethra, in the form of a bath, fomentation, and a pultice, that the contagion may be purged out, the injurious pains mollified, and the strangury amended.

As such injections can wash and cleanse the whole length of the urethra, and various remedies be applied according to the changeable state of the evil, they hoped they would cure a gonorrhea by injections only, as a local disorder. A celebrated physician was of this opinion; * who would have *aquam calcis vivæ, saccharum saturni, vitriolum album, decoctum guajaci*, &c. to be injected into the urethra, by which he promised a certain cure of the gonorrhea. I confess myself very averse to this method, which I believe to be dangerous, for such constringent remedies must be certainly injurious, afford but false hopes of a cure, whilst they stop the flux and by no means produce a cure; nor does the sensible urethra bear such acrid remedies with impunity, but sometimes suffers intolerable pains; it is entirely wrinkled until it is hardened, by the repeated use of such

* Morando-Morando Prima Decade di Lettere, &c.

P. 111, 112.

such remedies ; from whence the most obstinate complaints afterwards follow, which, together with all these already retained by the venereal virus, are to be feared.

The more prudent physicians only used injections of emollient and detergent remedies, that the affected place in the channel of the urethra might be cleansed ; such a method is thus received in the *materia medica*. If a great heat is felt in the urethra, a small handful of the seeds of quinces, infused in rose water injected warm into the urethra, will mitigate and inviscate the corroding acrimony.

But this is to be remarked concerning the injections to be applied in the cure of the gonorrhea ; but the cure is foreseen to be more difficult where the place affected in the urethra is more distant from its extremity, and tends towards the prostatae and the bladder ; for the gonorrheal corruption, in the channel of the urethra, is driven backward by the injections, and the contagion is applied to remoter places, which is very dangerous. It is indeed true, that the urethra, running long the inferior part of the penis, may be easily closed, so as that the injected liquor may not reach the posterior parts ; and then that whole part of the urethra, between the place closed or pressed by the fingers, and the opening of the urethra, may be safely washed and cleansed : but if the least negligence is here committed in a choice of a place for this pressure in the urethra, or if (through any cause whatsoever) the urethra is not entirely pressed, a part of the injected liquor will pass through that stoppage and drive the poisonous corruption farther in.

Where the admirable fabric of the penis was described in Sect. 1447, it was remarked, that the internal membrane of the urethra is pierced by a copious number of little oblong holes, or greater or lesser pores, which the excretory channels of the glands, placed in the cavernous body of the urethra, produce ;

produce: those channels near the internal membrane of the urethra run through the cavernous body of it, and then obliquely penetrate the cavity of it, which they smear with a mild secreted humour, and so fortify it against the acrimony of the urine. The orifices of these channels open by an oblique duct into the urethra, and therefore bear the figure of a half-moon; therefore, though the injections may not protrude the corruption towards the posterior parts, whilst the urethra is pressed by the fingers, they can still urge the virus into these furrows or mouths, and so propagate the evil in the cavernous body of the urethra.

If all these circumstances are considered, that cleansing or washing, formed by the urine itself, will appear most safe and easy, for the whole length of the urethra is washed and cleansed; this is ejected with great force, whilst the contracted bladder is agitated after the vanquished resistance of the sphincter; but such is the direction of the urine cast out, that it sweeps away the corruption adhering in the urethra, but urges it not into these channels distributed through the cavity of the urethra by any means, though some of them open with orifices sufficiently spreading. It is indeed true, that the urine, even of a sound person, has some acrimony in it which injures these excoriated and ulcerous places; but it is in the power of art to render the urine so thin and mild that it can in no measure irritate the urethra; the patients are therefore enjoined to drink more than is needful, and to have their drink prepared of mild watery remedies infused in pure water, made into a decoction of emollient herbs, such as an infusion of liquorice, milk whey, milk and water, small-beer, warmed emulsions, &c. amongst which those which are most pleasing to the palate are to be chosen by the patients.

But as the urine which is all night retained in the bladder, always becomes more acrid, and a
quan-

quantity of matter is also accumulated in the cavity of the urethra, during the time of a longer sleep, yet the damages to be feared may be easily avoided: if the patient drinks two pounds of small drink before he composes himself to sleep, in three or four hours after, he will spontaneously awake to make water; that done, he may take a larger draught of some cooling liquor, and sleep again; so the urine will remain thin, and will by no means be rendered acrid, whilst the corruption collected in the urethra will be also cleansed away by the frequent urine, and the strangurial injuries, which so often accompany the gonorrhea, will be avoided or much eased. All that utility that can be expected from the injections will be obtained by this method, without dread of any other damage.

If little confidence is to be reposed in these injections which are mild and soft, and that they only wipe away the matter, that which is to be imagined from the more acrid remedies, injected by mountebanks, easily appears: those which are usually applied to venereal ulcers, in places covered with the cutis, will be mentioned in Sect. 1463. If these remedies are liquid, they most malignantly affect the sensible internal superficies of the urethra with their corroding power, and create the most intense pains: but we shall see hereafter how little is to be expected from local remedies alone. The same disadvantage is to be expected from the wax bougies which have acrid corroding remedies mixed in them, concerning which matter see Sect. 1451. Even though they consist of soft wax, unless they are introduced by a skilful hand, they may certainly produce not the lightest of evils. A man, wearied with a daily distillation of the urethra, was persuaded to thrust a long small bougie of this kind into it; as this introduction easily succeeded, it penetrated the bladder, so that a remarkable part of it stuck in the cavity of the bladder; being then softened by the heat of the place,

place, it became more flexible, and twined into a knot, which obstructed its passage out again when attempted to be drawn: it was at length pulled out by such force that a violent hæmorrhage ensued, together with a tumour of the penis and scrotum, and swellings of the belly; yet he escaped from this no small danger by the assistance of a skilful surgeon.*

By mercurial purges often repeated.] Many celebrated physicians have with success applied cathartics often repeated to the curing a gonorrhea, and they even praise it as the only efficacious one; so *Antonius Musa Brasavolus* †, and many others after him, have thought: but as the efficacy of the mercury, in curing the venereal disease, was so celebrated, therefore a mercurial purgation was by far preferred to any other by many of the faculty; yet it is very certain, that other purgations had been oftner sufficient to rout away this evil; so *Sydenham*, § in treating of the gonorrhea, says, *Curationis omnis cardo in remediis catharticis vertitur, quantum hucusque usu comperimus, quorum auxilio vel educitur humor peccans, vel procuratur diversio succorum corporis naturalium, qui aliter hosti in pabulum cederent*: “The
“ sole foundation of this cure depends upon cathar-
“ tic remedies, as far as we have hitherto disco-
“ vered of their use; for by their assistance the
“ vicious or peccant humour is brought forth, or a
“ diversion of the natural juices of the body pro-
“ duced, which would otherwise be given up as
“ food for this hostile disease.” I also acknowledge that this disease can be cured by whatsoever cathartic remedies which are for a long time and often applied: but he chose the strongest, which purge the bile particularly, and also the foul corrupted matter from the blood.

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* *Academ. Royale de Chirurg. tom. III. p. 610.*

† *Aphrodisiac. p. 634.*

§ *Epistol. Respons. II. p. 418.*

It was before proved by many physicians, that the contagion of the venereal disease is entangled, and then unites itself with the fat humours of the body; they therefore prescribed those remedies which dissolve and then bring all the slow and fat humours from the body. There is much to be hoped that the contracted virus, which was united to these, can be freed from its chains and go out of the body, for by the repeated use of stronger purging remedies a fat man can be entirely emaciated, as before mentioned. In Sect. 761, where the use of purgations in an intermitting fever is treated of, it was advised, that even good humours were to be broken by the purging medicine, and then to be purged out in the manner as it is mentioned of *Helmont*, in the same place, who experienced it to his prejudice, whilst he was curing of the itch; he was so emaciated by the repeated use of purging medicines, that his knees trembled, his voice grew hoarse, and all his strength failed him: he from hence concluded, that such purgatives had turned the vivid substance of the body into a liquid and a putrid disease. Such purging remedies have such particular virtue in them, that they are usually called *hydragogæ* by the physicians, which *Sydenham** testifies, *sola Jalappæ radice pauperibus aliquoties subvenerit, quorum tenuitati, & rebus angustis domi, consulendum erat*: “A purge of
 “Jalap only could oftentimes relieve the poor, for
 “whose leanness of body and narrow circumstances
 “at home it was to be prescribed.”

In the *Materia Medica* there are three methods of making up these purgative remedies; the two first of which contain a large dose of *mercurius dulcis*, which seems not to be yet so absolutely or always requisite. The celebrated *Boerhaave* himself,† did not approve of mercurial preparations for curing the gonorrhea, but *Jalappam*, *Hermodactylos*, *Scammoneum*, *Senam*, *imprimis*

* Epist. Responsor. II. p. 419.

† In Præfatione ad Aphrodisiacum.

mis. Hæc, crebro usurpata, potestatem habent dissolvendi sanguinem in aquam, hanc depellendi deorsum, & evacuandi per intestina; hæc agunt valide semper & in urinæ vasa, vesicam, urethram. Hinc & laudatissimus horum usus in locis huic malo nativis, Africa, & America; quin & probatissimus quoque apud optimos fere nostrorum in arte magistrorum: “ Particularly Jallap, “ Meadow-saffron, Scammony, and Sena: these, “ often and a long time used, have the power “ of dissolving blood into water, of driving that “ downwards, and evacuating it through the bowels; “ and they always strongly operate in the vessels “ in the bladder and urethra: hence the use of these “ remedies became not only most general for this “ disease in their native places, Africa and America, “ but were also the most approved of by almost all “ our best masters of this art.” He praised that method, whereby the recent corruption entirely adheres to one external place so as to produce an ulcer; then he adds, *Nunquam probabo temerarios ausus illorum, qui consulenti super hoc malo juventuti, ilico suadent usum argenti vivi; quod semper corpori nocet; nec necessarium sæpe habetur:** “ I will never approve “ of the rashness of those who immediately recommend the use of mercury, for curing this disease, “ to the youth demanding their counsel, for it always “ injures the body, nor is it often necessary.” But Sydenham† justly says, that a salivation by mercury will not cure a gonorrhea, whilst it carries off the Lues, which is a companion to it; from whence he stated the following observations: *Quoties Lues, & Gonorrhœa, una stabulantur, vel ante salivationem, vel eam jam peracta, Gonorrhœæ curatio tentanda est; quod & tutius fit, me judice, & facilius etiam, post finitam salivationem, cum, Luem habens comitem, Gonorrhœa ægrius dometur; quæ vero a prægressa salivatione quantenus subacta fuit, minori negotio expugnari soleat:* “ The

* In Præfatione ad Aphrodisiacum.

† Epist. II. Respons. p. 432.

“ The cure of the gonorrhea is to be attempted as
 “ often as the Lues and gonorrhea are coupled to-
 “ gether, either before a salivation or after it, which
 “ is, according to my judgment, yet more safe and
 “ easy ; for the gonorrhea being accompanied by the
 “ Lues, will be subdued with more difficulty ; but
 “ when the salivation is finished, the gonorrhea will
 “ be rooted out with less trouble.” *Boerhaave* *
 affirms the same, except it should be that species of a
 gonorrhea which makes its nest in the *Cowperian*
 glands ; in the cure of which he said, *Quare etiam*
subinde hic recurrendum erit ad gravissima remedia pty-
alismi. Quamvis enim Gonorrhææ priores eo nunquam
curentur, tamen posterior hæc species, in parte solidiore
glandulosa nidulans, in qua vasa arteriosa, & cordis
impetus, magis ætiosa deprehenduntur, mercurii vim
longe promptius excipit : “ Wherefore recourse must
 “ be now and then had to the strongest remedies for
 “ vomiting ; for though the former gonorrheas will
 “ never be cured by that, yet this last species rest-
 “ ing in the more solid glandular part, in which the
 “ arterial vessels and the impetuosity of the heart
 “ are found more active, receives the power of the
 “ mercury far more readily.” It is to be observed,
 that these glands adhere to the outside of the ure-
 thra, though their ducts open into the cavity of it,
 and are corroded in such a manner by the received
 virus, that they degenerate into deep, hollow, ca-
 vernous ulcers ; from whence the danger of an uni-
 versal Lues becomes very threatening, to avoid which
 a salivation was usually attempted.

Some more recent observations prove in like
 manner, that these remedies, which usually and hap-
 pily eradicate the Lues, are but of little or no use
 in curing the gonorrhea. This is testified by those
 famous English surgeons, who had the frequent cure
 of soldiers labouring under the venereal diseases,
 and

* In *Præfatione Aphrodisiaci.*

and those who were to be cured of a gonorrhea in
amp. That corrosive sublimate mercury, infused
in spirits distill'd from corn (more of which here-
after) had indeed wrought a confirmed cure of the
ulcers, but by no means of a virulent gonorrhea,
which can be cured without any mercurial reme-
dies, if not attended by other evils.*

Sydenham † reposed no manner of confidence in
the use of decoctions made of drying kinds of wood,
such as guaiacum, &c. which are prepared and ex-
pelled by many as specifics against venereal com-
plaints. For by these *universum ægri corpus, tum
recipue pars affecta, jam pridem nimis incalescentia,
ulcerius adhuc inflammabantur; nonnunquam etiam Go-
rrhœa, quæ paulo ante evanuerat, quod me observasse
memini, denuo in conspectum prodiit*: “ by heating
remedies the whole body, and especially the part
affected, long before inflamed, are still more so;
and the gonorrhea, which sometimes had also va-
nished, makes its appearance again, as I remember
to have observed.”

The celebrated Astruc ‡ advises the cure of the
gonorrhea to be begun by letting blood, for he holds
this to be an inflammatory disease, and that all the
consequences of an inflammation here to be feared,
and even a benign removal of the humours can be
there obtained; yet but seldom or scarcely ever but
in cases of slighter gonorrheas, and when the patients
were willing to acquiesce in repeated discharges of
blood and exact rules of diet: but this evil, if
but light, requires no such loss of blood, for a slight
affection, not obstinately adhering to the part af-
fected, is easily washed away by mollifying decoc-
tions only, and if I may sincerely speak, my opi-
on is, that no bleeding is required; for a mild
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* Medical Observat. and inquiries, vol. II. p. 83.

† Epistola Responsoria II. p. 224.

‡ Lib. iii. cap. i. sect. iv, & v. p. 165, & seq.

state of humours, as mentioned in Sect. 386, is required for the removal of the venereal contagion: this state is never to be expected from the place to which the contagion adheres, as it is capable of corrupting and corroding not only the skin, but the solid bones also: the only hope of a cure then consists in driving out the contracted virus by a flux. Besides, it very rarely happens, that the patients apply for remedies before some unaccustomed matter distils from the penis; so that a cure by a removal scarcely seems to be thought of, nor will it be worth while to let blood in every gonorrhea: still if there be a heat, and a painful erection, with a very painful dysury, *a celebrated man* believes,* *haud segnius, parciusve, venam esse tundendam, quam in ipsa peripneumonia, vel dysenteria*: “that a vein ought not to be
 “more slowly or sparingly pierced than in case of
 “a peripneumony, or a dysentery;” but I by a decoction of the roots of althea and liquorice only, when plentifully drank, together with an application of the most emollient fomentations, could oftener soften and overcome such powerful complaints; for they were thus immediately diminished, and the flux was poured forth in a larger quantity; for by these emollient remedies, and the relaxation of the passage, the corruption is to be expected to flow out in safety, and in greater quantity than if the whole cure was directed to healing the inflammation: for the venereal disease is not naturally prone to inflammation, as appears if the effects of the contagion, in a place conspicuous to the eye, are considered: for the first signs are *pruritus, calor, lenis inflammatio*; “an itching, heat, and gentle inflammation,” followed in a short time by *pustula subalba, squamosa, erodens*; “a whitish, scaly, corroding
 “pustule,” concerning which see Sect. 1444. Indeed it sometimes happens, that the virile member is inflated, in youth of a hot nature, by the use of a
 plenty

* Lib. iii. cap. i. sect. iv, & v. p. 168.

plenty of rich food and excess of wine, whilst they wear and totally exhaust themselves in their summer's heat and prime by immoderate venery; and it sometimes happens, that new-married men suffer an inflation of the member, attended with pain and redness, after having forcibly prepared a way for new enjoyments. Those who copiously use acrid diuretics, natural or artificial balsams, for the cure of the gonorrhea, experience this same evil. In such cases a sudden discharge of blood takes place, as will appear in Sect. 1460. I would only advise this, that the gonorrhea does not want or necessarily require venæsection, and that it should not always be begun with by opening of a vein in hopes of a happier and speedier cure.

Sydenham,* as it is known, used an abundant discharge of blood in curing of inflammatory diseases, but admitted that by no means in the cure of the gonorrhea, especially in the beginning of it, as he did not from thence hope for a benign removal of the beginning disease: for so he says, *In temperamento admodum sanguineo, & affectu pertinaciori, post mensem catharci datum, aut circiter, ut plurimum sanguinis unc. viii, vel ix, e brachio dextro detrahendas suadeo. Ut naturius celebretur Venæsectio, auctor non sum, ne hac occasione contagium penitus inferatur*: “If an exceeding sanguine constitution, or an obstinate infection after a course of purges had been given for a month or thereabouts, I advise that eight or nine ounces of blood at the most, be drawn from the right arm; but I dont advise letting blood more early, lest the contagion be inoculated or fixed by it.”

Purgations by stool principally conduce to the cure of the gonorrhea, and are recommended to be often repeated: a decoction of *Tamarinds and Sena leaves*, will often suffice for persons who are easily work'd, and daily drink it until the symptoms,

Q 2

namely,

* Epist. II. Respons. p. 422.

namely, the scalding of urine, strangury, the sensibility of the stricture in the urethra, are abated, the quantity of flowing matter diminished, and the colour of it changed for the better; for in the beginning, the flux is sometimes of a reddish colour, or a deep green, then grows yellow, then usually thickens and grows white. Let cathartics be still given, but at greater intervals, lest the force should be exhausted, and the body wasted by a large and continued discharge of matter; let stronger medicines be given to those who are not worked by these cathartics. So Sydenham,* who acknowledges that he has cured the poor with jallap only; commonly gave hotter purges, *aloes, coloquintida* mixed with *opobalsam*, of which he ordered 40 grains to be taken every morning at 4 or 5 o'clock, during 12, 14 or more days, *donec urinæ ardor, & materiæ seminiformis color flavus admodum, imminuantur*: “until the
 “scalding of urine, and yellow colour of the mat-
 “ter, were exceedingly diminished so as to render
 “the matter like feed.” He afterwards gave cathartic purges every other day during fifteen days: *quo tempore elapso, sufficit, ut bis in septimana sumantur pilulæ, donec humor, ex urethra stillare solitus, prorsus evanescat; quod, ut plurimum, non nisi post multos dies contingit*: “after that time it will be sufficient to
 “take the pills twice a week, until the accustomed
 “humour distils not from the urethra, which in the
 “most happens not until after many days.”

It is very evident, that the age and constitution of those men who take these strong and frequently repeated purges are to be considered; the gross and fatter bodies can bear these, but not the dry and husky, which are to be purged with milder remedies, but still not so frequently repeated. Such persons should drink the emollient decoction plentifully during the days of exemption from the cathartics, and nourish their bodies with light soft food; they

will

* Epist. Respons. II. p. 414.

will perhaps be more slowly cured, but the slower the safer. *Celsus* † certainly said very justly, *Purgationes quoque, ut interdum necessariae sunt, sic, ubi frequentes sunt, periculum adferunt. Affuescit enim non ali corpus, & ob hoc infirmum erit*: “ That as cathartics “ are also sometimes necessary, so when they are “ frequently repeated they bring on danger, for the “ body, grown accustomed to a want of nourishment, “ will be rendered infirm by it.”

It happens that these purgatives, particularly the more acrid, irritate and hardly fail of excoriating the intestinum rectum by a frequent tenesmus, whilst they likewise affect the adjacent neck of the bladder, and excite a strangury, or increase that which already accompanies a gonorrhea. An author,* famous for curing this disease, excellently remarked, that after the quantity of the flux had been diminished, and its quality amended by the use of these purgatives, the cure would be no better advanced by a farther use of them; but a fresh dysuria might spring up, and the priapism, and quality of the flowing matter, become again much worse; from whence the cure must be afterwards performed by milder remedies: this frequently happens to men of a dry, hot, bilious constitution, but those of a cold, lax, phlegmatic nature, bear these evacuations by stool more easily. It will presently be said how offensive the erections of the penis may be in curing the gonorrhea; how the priapism arises after the frequent use of stronger cathartics, and how the milder purges given at greater intervals solely conduce to a cure.

It sometimes happened, that some imprudent young men, willing to conceal this filthy disease, and still anxiously desirous of a cure, had used some drastic purging remedies daily for many days. I have known the tunica of the intestines to be so cor-

Q 3

roded

† Lib. i. cap. iii. p. 31.

* Turner Siphylis, p. 70.

roded in one of these, that the blood broke suddenly and abundantly forth through the anus. I have known some others, all exhausted and pale, have languished for months before they could in any measure recover their strength. How many exiles are not to be feared whilst youth expose themselves to new dangers, when scarcely cured of repeated gonorrheas, by which they are severely punished, or in having recourse to either their own country or that of imposing mountebanks, for a repetition of such a cure; for the common worn-out prostitutes, who serve their time in a brothel, boast being very much skilled by filthy experience in the cure of this disease.

But though a gonorrhea is usually to be cured by milder and sufficiently evacuating purgatives, yet sometimes happens, that the cure is more slow and the patient is more difficultly purged; then Sydenham,* having increased the dose, gave it in a liquor which *ex Tamarindis, foliis Senæ, Rheo, Manna, Symplicio ex Spina cervina, &c. parabantur*: “was made up of Tamarinds, leaves of Sena, Rhue, Mann and Buck-thorn syrup.” Then if a cure did not succeed from these, he gave a dram and a half of the *pilulæ ex duobus*, with twenty grains of mercurius dulcis, and that twice in the week; these *pilulæ ex duobus* consist of an equal quantity of *Coloquintida* and *Scammony*; from whence it is justly called a drastic remedy; but he seems to have reposed a particular hope in this, *si Turbith minerale ad gr. vi tantum bis, vel ter, daretur (idque interposito debito temporis spatio, ne fort aboriatur Ptyalismus)*; quod quidem remedium in eradicanda difficiliori Gonorrhœa facile primas fert: “If viij grains of turbith mineral be given only twice or thrice (and that interposed by a due space of time, lest that a ptyalismus should by chance arise from thence;) which

* Epist. II. Responsor. p. 420.

“ is by far the most excellent and certain remedy
“ for eradicating a violent and tenacious gonorrhea.”

Turner † praised this same method, if the gonorrhea should be excessively virulent, and that there were shankers also in the genitals.

It appears from all that has been here said, that men the most experienced in curing these evils, had reposed particular hope in the use of repeated cathartics; and that they first gave the milder remedies, by which, if the evil was not amended, the more powerful and even the drastic purges were applied by them, particularly in repeated and very virulent gonorrheas, such as those are wont to be when they only manifest themselves a long time after the suspected venery. It also appeared, that the application of mercurial remedies is not always necessary, nor that a gonorrhea obeys a salivation.

The method of purging is usually very tiresome and displeasing to many, concerning which the celebrated * *Boerhaave* thus says, *Neque crediderim, temere exultam usque methodum huic propositæ præripuisse: novi quippe alias plerasque, tentavi, cum hac comparavi. Fateor, incommoda est aulicis, in celebritate versantibus, vel munera publica gerentibus; sed tuta sæpe ardua sunt, & molesta. Novi promissa Agyrtarum, se curaturos vel in regali natantes luxu, equitantes, omnia voluptatum genera exercentes. Sed mihi, & hæc conanti, haud licuit esse tam beato. Quin & dolui sæpe, dum sic tractatos Illustres viros vidi per annos vitam agere reliquiis veteris mali obnoxiam:* “ Neither can I
“ easily believe, that this method had been caught
“ up readily so as to be generally divulged and
“ spread abroad, because I have known some, and
“ tried some others, which I have compared with
“ this. I acknowledge it to be incommodious to
“ courtiers who frequent brilliant assemblies, or to
“ those who bear public offices, but every safe method

Q 4

* Siphylis, p. 71.

* Aphrodisiac. in Præfatione.

“ thod proves troublesome and difficult. I have
 “ known some quacks who have promised a cure
 “ even to those persons floating on the torrent of
 “ luxury, riding, or exercising themselves in every
 “ other kind of pleasure; but my endeavours in
 “ these cases could promise me no such happy suc-
 “ cess, and I have often grieved to see many illustri-
 “ ous men thus treated, and pass their lives, still
 “ continuing obnoxious for many years to the re-
 “ licts of the inveterate evil.”

The drinking of mineral waters has been praised
 by many for curing a gonorrhea, or at least for
 extirpating the light remains of it; but Sydenham *
 was indignant at seeing this pass into a custom
 much embraced; for he affirms cathartics to be pre-
 ferable to all other remedies, and severely incul-
 cated that the patients must be very temperate in
 their use of mineral waters; for he says, that it is
 certainly manifest from these *morbi reliquias, e cor-
 pore eliminandas, vi adstringente, & plus satis sanativa
 arctius constringi, & quasi clavo figi trabali; unde, quod
 sæpius observavit, scroti tumores enascebantur, quoties
 in morbi principio, vel statu, pejoraque adhuc sympto-
 mata, ut carunculæ, si quando sub exitu ejus, pota-
 rentur*: that the reliques of the disease, which
 “ are to be driven out of the body by force, are
 “ but more tightly wedged in, like a spike driven
 “ into a beam, when that force surpasses the suffi-
 “ cient measure for healing; from whence he often
 “ observed that tumours of the scrotum were bred
 “ in the beginning of this disease, or in the flux,
 “ and yet worse symptoms, such as the carunculæ,
 “ when these waters were drank just at the depar-
 “ ture of the disease.” Thus it appears what the
 opinion of this excellent man was concerning waters
 impregnated with iron. There are mineral waters
 which contain little or none of the iron principles,
 and such as sufficiently purge by stool. May not

these be of service towards the end of the disease, as they do not debilitate by purging, and at that time only gentle cathartics are given. The celebrated *Hofman* † praises those purges or draughts working by stool, for cutting away the viscous mucous force of the humours; then adds, *Et quoniam in gonorrhœa inveterata, & in morbis vesicæ & urethræ ex hac prodeuntibus, per aliquot, exempla, mirabilem thermarum Carolinarum potum, & earum injectionem in membrum crebriorem, deprehendissem, non dubitavi ejus usum, & fructum, de meliori commendare*: “ And “ because I had found by some examples, that more “ frequent draughts and injections, *aquarum Carolinarum* into the member, both in an inveterate “ gonorrhea, and the diseases of the urethra proceeding therefrom, proved wonderful, I doubted “ not of their use, nor hesitated in recommending “ their operations as the best:” for these waters purge by stool very sufficiently.

For a young country fellow labouring under a recent gonorrhea, accompanied for fifteen days with the most violent pains of a dysury, phymosis, and many ulcers by which the corona of the glans was covered, and the rest excessively swell'd, was perfectly cured by an internal and external application of the Bareges waters only.*

Therefore, where it happens that the constitution of the patient is debilitated, the body exhausted by repeated cures of a virulent gonorrhea, and the vigour wasted away by too much venery, such circumstances should check an attempt of a cure by many repeated strong purges; then the physicians, willing or unwilling, should use milder purging remedies. A man had laboured four years under the most malignant gonorrhea, his strength forsook him, he passed the nights without sleep through a devouring

† Med. Rat. System. tom. IV. part. II. Sect. II. Cap. VII. p. 420.

* Specim. novi Medic. Conspect. Edit. alter. p. 175. in notis.

devouring fever, that increased upon him every evening; all the remedies tried upon him proved fruitless, for a slow flowing corruption still threatened some other impending evil: it plainly appeared, that no more evacuations could be attempted upon an exhausted wasting body. *The extract of cicuta*, together with alder flowers infused in milk, were at length given him; then by drinking very plentifully of that, he was in a few days greatly relieved from the evil; he recovered his strength, together with his appetite, and natural inclination to sleep, and the miserable patient in six months after, grew well, sound, fat and strong.*

By emulsions.] For common drink these may be taken at will, as they are of a mild nature, for they abate the acrimony, dilute, and render the urine less acrid; milk whey, only adding a fourth part of milk, or the like, to a decoction of althea, may be substituted for people of low circumstances, and let medicinal emulsions be sometimes given of those seeds called the four greater, colder, and less; when this emulsion is strained, *let nitre, syrup of diacod. &c.* be mixed with it; this, according to the practice in the *Materia Medica*, is to be given in the evening after the purging medicines are taken, that the operation may be more effectual.

By balsamics.] These balsamic remedies have been given by many of the faculty, whilst the evil adhered in the passage of the urine, and when the urine was usually attended with a fluor; they are extolled for their diuretic power, and usually applied for curing of ulcers: the natural, pure, and fragrant balsams are these; *Balsamum de Mecca, Peruvianum album & nigrum, Tolutanum, de Capayba, Terebintina, &c.* which were accounted very famous for curing of gonorrheas, and the chymists praised ol. stillat. prepared from natural balsams, such

such as that of oil of turpentine, balsam capayba, &c. which are indeed very penetrating, but they are always more acrid and hotter than those balsams from which they are prepared, so that they cannot be of service except by a prudent use of them: the testicles never more frequently swell than after a free use of such-like remedies; especially if they are taken without cathartics, or applied in the beginning of the disease, according to the custom of impudent quacks.

Yet we see that these excellent physicians began to cure a gonorrhea by giving purging remedies to the patient, then gave a natural balsam when the evil was amended. *Sydenham** indeed added some grains of opobalsam to some more drying remedies, so as to form a paste pliant enough for making it into pills; but he had often purged the patients before he gave them xxv drops of opobalsam every night in a bit of lump sugar.† *Turner*‡ followed the same method: he was famous in curing these diseases; for he first purged the patient, according to custom, until the flux changed to a better colour, then performed a cure by giving an ounce of balsam capayba, made into a paste by the addition of white sugar, or conserve of hips made into an electuary; the bigness of a nutmeg of either sort is to be given to the patient morning and evening: some milder purging remedies are sometimes to be mixed with this balsam, and it will indeed be very effectual. Thus it is directed in the *Materia Medica*, to be composed of one ounce of turpentine, with half an ounce of China rhubarb, and powder of liquorish added to it until it becomes a paste fit to make pills of four grains each, of which let the patient take one every hour: here it is particularly to be observed, that a limited dose is to be given, lest it should

* Epist. II. Responsor. p. 419.

† Ibidem, p. 421.

‡ Siphylis, p. 73.

should prove over-heating or irritating. Turner & prefers balsam capayba, because it is cheaper than opobalsam; and because this begets not that odour of March violets in the urine as the turpentine indeed does, from which the whole family often discovers what disease is attempted to be cured, which may often occasion great mischief to the unfortunate patient.

These natural balsams can be given safely in a limited manner, where the disease is already amended by the use of purging remedies; I have always abstained from these hotter artificial remedies, which derive their names from sulphur, for they greatly inflame, particularly if made up with essential and acrid oils, such as *balsamus sulphuris terebintbinatus, anisatus, juniperatus, succinatus, &c.* “balsam of sulphur mixed with turpentine, aniseed, juniper berries, amber,” &c. and plenty of emollient decoctions should be drank between the times of taking these natural balsams, that the urine may remain in a state of mildness, lest it should irritate the affected place it washes.

In considering these matters, I could not understand the reason why some celebrated physicians practised the severest diuretics in curing a gonorrhea; nay, we read * that a certain physician of Leyden, had even used cantharides for that purpose: *Gonorrhæam virulentam solis Cantharidibus feliciter curasse, quas vino Rhenano macerabat, infusionem alio liquore temperatam propinans; sed, cum initio non sine summo cruciatu & exulceratione vesicæ curam absolveret, misquit tandem cum oleo Amygdalarum dulcium, syrupo Fernelii, succo Tapsi barbati; & intra triduum, beneficio copiosæ urinæ, malum suaviter sustulit:* “and “that he happily cured a gonorrhea with cantharides only, pounded and infused in Rhenish wine, “which he still tempered by making the patient “drink

§ Siphylis, p. 73.

* Thom. Barthol. Epist. Med. Centur. IV. p. 289.

“ drink another liquor; but as he could not at the
 “ beginning perform a cure without an ulceration
 “ of the bladder and the most excruciating torment
 “ to the patient, he at length mixed oil of sweet
 “ almonds, syrup of Fernelius, and tapfus barbatus
 “ with it; then by the help of all these, the patient
 “ could freely make water, and in three days time
 “ the evil was worked away.” This account was
 wrote by *Matthias Jacobus Matthiades*, to his uncle
Thomas Bartholinus living in Leyden, who wrote the
 following in a month after to his nephew; * *Infusum*
cantharidum alibi quoque in historiis laudavi, Gonorr-
rhææ virulentæ, & ischuriæ, remedium; cujus felicem
successum non semel ipse sum expertus. Notandum vero,
ne noceant cantharides, integras esse sumendas. Ubi
vesicis exulceranda cutis, extrema abjicienda, in quibus
benignior facultas latet; quæ servanda sunt in infuso
boc, urinæ vias expurgaturo. Legitimo modo mistum
infusum, nunquam, quantum ego viderim, vel crucia-
tum, vel exulcerationem vesicæ, provocavit, ut nec pin-
guioribus abstergentibus opus fuerit:

“ I have also re-
 “ commended an infusion of cantharides in another
 “ place, as a remedy for a virulent gonorrhea and an
 “ ischuria; for I have experienced the happy success
 “ of it much oftner than once: but it is to be ob-
 “ served, that the cantharides are to be taken whole,
 “ lest they should prove hurtful. When the skin
 “ is to be fretted by a blister, the extremities are
 “ to be thrown away, which are in this case to be
 “ preferred, for in them the more benign power
 “ lies, which will cleanse the urinal passages: this
 “ infusion, when properly mixed, never, inasmuch as
 “ I have seen, caused any torment or ulceration of
 “ the bladder, so as there was no need of any more
 “ fat abstergent remedies.” That celebrated au-
 thor *Mead*,† recommended the use of the tincture
 of

* Thom. Barthol. Epist. Med. Centur. IV. p. 292.

† Monit. & Præcept. Medic. p. 256.

of cantharides for this disease, though not directly indeed for curing a gonorrhea, but for vanquishing a remaining injury, such as a little gleet which often remains after a gonorrhea, though the venereal virus had been expelled from the body; more of which will be said in the following section: he ordered two drams of cantharides to be infused in a pound and a half of spirits of wine rectified, to which were added *rheum*, *gum guajacum*, *gum lacca*, and a little *cochineal*; this infusion being well incorporated, he gave a prudent dose of it morning, and evening at bed time; it was diluted so as to be potable in warm water, from the quantity of thirty to fifty drops; that quantity can be, without doubt, borne without dread of any difficulty of urine. It plainly appears, that the rest of the medicines which are added to the cantharides in this composition in so small a dose, can have little power, so that the whole effect of this remedy depends upon the proper mixture of the cantharides.

It is well known, that the virus of the cantharides produces a violent strangury, renders the urine bloody, and inflames the bladder, particularly the neck of it, especially if these insects are taken in at the mouth: the like effects have sometimes been observed from an external though still a milder application of them: a greater quantity taken of them hath frequently occasioned a speedy or sudden death. A strong robust man, of sixty years of age, being diffident of his manhood in the exercise of then decaying venery, of which he appointed himself a more potent share, and to rouse up this, had taken a dram of powdered cantharides: In a short time after felt a pain in the hypogastrium, and a great difficulty of urine; the morning following a physician was called, who found the wretch's body all over cold and wet with a viscous sweat, and scarce any perceptible pulsation; the extremities of the body were entirely frozen and livid, the abdomen swelling

swelling and extended, so that in a few hours he expired. In the body was found the peritoneum changed from a red to a livid colour in the hypogastrium; the bladder was excessively distended, and of a deep red at the bottom, particularly so at the neck of it; all the internal superficies of it was livid and mortified.*

It is known that an erection for venery is excited by acrid diuretics, and mostly so by cantharides.† We read that this erection bred from thence becomes invincible, and persists even until death; but it is acknowledged by all that nothing is so obstructive to the cure of a gonorrhea as venery, wherefore the prudent physicians carefully use every method of subduing an approaching erection of the penis; they order low diet, and an abstinence from all spirituous liquors, for the physicians then allow them but a small share of white meat boiled, but advise them to refrain from eating fish of any kind. *Alexander Trojanus Petronius* ‡ severely commands *Abstinere a sale, a salsis, a motu nimio, ab aromatibus, denique ab omnibus calefacientibus, & mordicantibus, & ab omni Veneris, non solum usu sed etiam imaginatione, &c. Et profecto potissima diuturnitatis causa hæc ipsa est; quæ quoad persistit, purges corpus, temperes, optima victus ratione regas, nihil proficis*: “to abstain from salt and salt victuals, from violent motion, finally, from over-heating or irritating exercise, and not only from the actual use of venery, but from the imagination of every thing conducive thereto, &c. for this is truly the chief cause of the disease’s long continuance; then let the body be purged as long as it persists, and an exact regimen be observed, or you will pro-
“fit

* Barrere observat. Anatom. p. 205.

† Jobi la Meeckren observat. Medic. Chirurg. Cap. XXXIV. p. 141.

‡ De Morbo Gallico Lib. VII. Cap. IV. Aphrodisiac. p. 1322, 1323.

“ fit nothing ;” from whence the change of place has been of service to some persons, that it may occasion *ejus oblivio, quod coitum irritabat: sic etiam alii, quia in exilium missi:* “ an oblivion of what “ was inciting to venery ; so some others for the “ same reason having been sent into exile :” others also into prison, *aut graviore animi cogitatione affecti sunt, ab antiquissima Gonorrhœa se vindicaverunt. Ita ut mirum non sit, si viris, vel postquam illa incepit nunquam cœuntibus, diuturna tamen illa contingat:* “ or have more severely punished themselves by a “ resolution of shaking off the remains of an old “ gonorrhea ; so that the continuance of the disorder is not to be wondered at, even in men who “ from the beginning of the distemper have abstained “ from venery.”

Hence it is very evident, how injurious the use of cantharides may be in curing of a gonorrhea, as the cure can be retarded by only one erection of the penis, as the celebrated Boerhaave thus says ; *Vidi hinc, sæpe vanos fuisse hoc in morbo vel probatissimos sanandi modos, si, quacumque demum de causa, quæ hercle multiplex hic nimis, homo arrigit, imo, sanatas jam jam Gonorrhœas, unico incitatae libidinis impetu, recruidisse ætutum, novamque denuo sanationem de integro exigisse. Quidquid ergo prurientem imaginem titillat, in cibo, condimento, potu, medicamento, vel per conversationem cum amabili sexu, tabularum adspæctum, sermones, lectionem, cane pejus & angue fugiendum. Aquæ potus, vel feri lactis, cerealia, boræi fructus, conducunt:* “ I have from hence seen the best “ proved of methods in curing this disease often “ prove fruitless. If a man greatly encourages this “ erection by any causes whatsoever, which are indeed manifold, even a gonorrhea but just cured, “ presently returns to its former crudeness, and requires an entire commencement of a cure from “ only one single erection ; whatsoever, therefore, “ that

that tickles the imagination in meat, fauce, drink, medicines, or in conversation with the fair sex, the sight of pictures, attention to books or conversation, must be shunned and accounted a more dreadful evil than a mad dog or a venomous serpent. Drink consisting mostly of water or whey, and food of the products of Ceres, and summer fruit conduce to a cure."

All violent exercises by which the genital parts are shaken, such as fencing, dancing, running, jumping, and riding are to be avoided, for they increase the disease; but riding is the most injurious of all the rest, especially when swift and constant. I do not remember to have seen a more deplorable instance of this kind, than in a young nobleman who was one night infected in a common bawdy-house, and had undertaken a journey the next morning, and in four days after, was manifestly attacked by a gonorrhea; then in galloping night and day back to his friends to be cured, he was almost ruined.

S E C T. MCCCCCLIX.

THE cure of the gonorrhea is to be persisted in until nothing more distils from the penis, or manifests itself in the urine.

The cure of the gonorrhea is sufficiently troublesome, because, as before said, it requires a repetition of cathartics; hence how much worth while it to have the limits of this cure known, when the patient may be safely left to himself without any danger of a return! when some physicians usually follow this most safe way, many others are accustomed to protract the cure a little, at least as far as an exact rule of living may carry it. The

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patients very often also hardly believe themselves entirely cured, and are rather willing to undergo new molestations, than to remain in doubt of an entire restoration to health.

As long as any remarkable matter distils from the penis, the gonorrhea is justly believed to continue still in the body; though even the quality and colour of the flux are amended, and the scalding and difficulty of urine much diminished: from whence *Sydenham* * solicitously advised not to confide in a cure, *quando ejusmodi ichor, qui, ardore, urinae & flavo materiae extillantis colore disparentibus maneat praesertim, in summitate colis digitis compressi, aut guttulam unam alteramve, cernitur, a debilitate tantum & laxitate partium, ob diutinam virosi fomitis in eam moram, critur; miseri enim experiuntur magno suo malae reliquias esse contagii non penitus deleti, quod, licet quodammodo subactum, ex levissima quaque occasione (a potu scilicet nimio, aut exercitio vehementiori quolibet, aut simili alia causa) novas excitat tragédias, Gonorrhoeae postliminio recrudescente:* “when a yellow ulcerous excrement of this sort is distilling with a scalding urine, and notropy between the finger and thumb, but dropping from them when separated especially in the morning; it is also judged from the debility and laxation of the parts, that a continual supply of the poisonous fomes is bred in them; for the miserable patients, to their great damage, experience that a relict of the contagium still must be worked away, for though it be in some measure subdued, it still at the least irregularity, such as over-drinking, over violent exercises, or other such-like causes, excites new pain, and calls back a gonorrhea to an hereditary state of crudeness.” It cannot be denied that the use of milder purges is serviceable in such a case; then it must be particularly insisted that the rules of diet be strictly adhered to; for

* Epist. II. Respons. p. 419.

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then, as *Sydenham* excellently remarks, the evil increases or gains ground still as the patients recede from them; but it gradually diminishes as they subject themselves to a more cautious method of living.

The flux in the beginning of a gonorrhea daily increases in quantity, the scalding of the urine, and strangury are excessive painful; the ulcerous green excrement flows out sometimes with small streaks of blood mixed with it, sometimes it is yellow with a mixture of green, which gradually as the evil mends, turns white; the quantity of the matter then also diminishes, and its thickness is increased. A celebrated author hath remarked,* that the yellow colour of the flowing matter still remains in some until the end of an entire cure; but the malignity of a gonorrhea usually follows this successive order of colours; as the green with a mixture of blood is accounted the worst, and the mildest that which is whitish, the application of proper remedies will gradually make it correspond with the colours before mentioned, to have declared some degrees of amendment; but this one circumstance is to be observed, that the yellow colour will sometimes, as I have seen, remain until the end of the cure.

It appeared where the gonorrhea was before treated of, in Sect 1447, that the mucous kind humour, which was discharged through the excretory ducts into the cavity of the urethra, smears its internal cavity, and defends it from the acrimony of the flowing urine: that humour is natural, and but a small quantity flows out through the spreading orifice of the extremity of the urethra; it sometimes makes light spots on the shirts of the soundest of men, who never had any cause to suspect any hurt from a former gonorrhea, as they never had one.

Where I was certain of the entire purity of a man, I often endeavoured to enquire into this matter

R 2

upon

* Turner Siphylis, p. 72.

upon every favourable occasion, and I found such marks or spots upon the linen. It appeared in like manner, that this natural humour is infected by the venereal virus received after impure venery, that its secretion is increased, and those excretory ducts are sometimes ulcerated and corroded; from whence all the contagion being expelled from the body, that natural liquor may flow out still, pure from all infection, and in a greater quantity than it usually did before the disease; for that same reason, some filaments like little eels are observed in the urine, and mostly so in those who have laboured under repeated gonorrheas. If the penis of such a man is pressed a little after a sound sleep, something mucous and pellucid like the white of an egg generally comes out, which the English physicians usually call a gleet, which has nothing infectious in itself, and sometimes remains for many years: this single molestation creates a suspicion of a still lurking evil which was not sufficiently expelled from the body and makes the patient perpetually unhappy.

Nor is it easy to dispossess those who have imprudently passed away their prime of years, of those fears I have known one to have dreaded a lurking evil whilst an incurable flux continued upon him after a tenth salivation: these scruples are still cherished by sordid quacks, who, through a thirst of infamous gain, give large quantities of crude mercury to the wretched patients, in order, as it were, to radically extirpate an evil, of which there is not even a trace in the body. Every one of these mountebanks boasts of a new secret; that he has found out another method of administering mercury, which was never before known to mankind; and that he can extricate and expel any lurking mercury from any part of the body: he sells this and many more such trifling nostrums to the credulous diseased, who find themselves miserably deceived by them.

If therefore the orifices of the ducts, still pouring out a mucous humour into the urethra, have remained dilated, or have been corroded after a gonorrhea, a perpetual flux of such viscid liquor will proceed in a greater or less quantity, without any dread of a lurking venereal contagion: such a flux indeed may be incurable.

James Drake * had an opportunity of seeing this matter in the dead body of his own servant, who, for some years, endured such an obstinate flux of viscid matter, and afterwards died of a peripneumony; a caruncula, which is usually placed in the left excretory *Cowperian* gland, was found, which was formerly so corroded by an ulcer, that the orifices of both ducts became but one. This he explained by the same figure which *Cowper* himself delineated. Hence an almost perpetual flux of viscid matter, called a gleet, and prepared by these glands, must follow; and the same must necessarily happen to all those to whom such a misfortune befalls, whether in these said *Cowperian* glands which consist of a mass sufficiently conspicuous, or whether in the other less excretory ducts dispersed through the cavity of the urethra.

From hence the diversity of the quantity of that flux is also understood, according as such greater or less ducts had been in like manner affected to a greater or less number.

Some have believed, that what thus perpetually flows out is seed, and thence dreaded a weakness and corruption to proceed from the back; but this mucous humour is entirely different from seed.

Still this flux is usually incommodious, though unattended by a venereal contagion, of whose lurking evil the patients entertain perpetual fears, particularly such as have suffered by frequent gonorrheas; from whence they seek for remedies, that

R 3

they

* Anthopolog. Nov. tom. I. p. 140.

they may at least be freed from those fears by that flux being dried up. It appears from what has been said, that it cannot alway be cured; still those remedies which cannot at least injure, but prove rather sometimes a little profitable to the patient, are generally recommended; and also that such patients have no recourse to pernicious remedies, but to be ware of being deceived by the impositions of quacks or mountebanks.

The first advice I usually give is, to beware of an almost perpetual habit of touching or handling the genitals, for the patients are generally inquisitive, and try whether the flux increases or diminishes, changes colour, or if any matter still flows out by pressing or squeezing the penis; so that they thus rather increase the secretion and excretion of that mucous humour. Great hope is reposed in astringent remedies; for the morbid relaxation of these parts is usually blamed by them. If they require the internal application of inoffensive remedies, these can be easily granted them; *Corallos rubros, cancerum lapides, succinum, mastichen, conservam rosarum rubrarum*, "Red coral, crabs egg, succinum, conserves of red roses," and such like, which some authors earnestly praise, it is then our duty to apply them readily: but those remedies which are to be locally applied to the urethra must be attended with great caution; for if the strongest astringents, such as *allum, vitriol, sugar of Saturn*, be applied by injection, a constriction of the urethra, a callus, dysury and ischury follow, and are afterwards extremely difficult to be cured.

Turner collected many cases * from whence we learn, that many labouring under such a flux, tho not only copious but viscid too, have joined themselves in marriage, begot sound children, and infected not their wives; yet it also appeared, that an entire cure succeeded not without great difficulty

* Syphilis, p. 445, & seq.

he indeed made trial of various remedies for this purpose; such as Spaw waters, and those of such-like wells, but a moderate use of balsam capayba was preferred to all the rest.

S E C T. MCCCCCLX.

AN inflation of the penis is carried away by an anodyne emollient dissolving pultice, similar to a fomentation; by a copious bleeding; and by those remedies mentioned in Sect. 1458.

The admirable structure of the penis was before explained in Sect. 1447, together with the manner in which it increases in bulk by an erection, and how it afterwards slackens or diminishes again; the cavernous swelling bodies of the penis only, and that cavernous body which surrounds the urethra, and constitutes the external substance of the penis and glans, were also explained; as it then appeared, as well as by much more said in Sect. 1449, how that a severe inflammation can occupy the penis; from whence a wonderful deformity of the shape of the member, a distortion on this or that side, an incurvation upwards or downwards, a dysury with racking pains, and other grievous evils may follow.

If the penis thus affected becomes ardent and painful, the application of a powerful antiphlogistic cure must by no means be delayed, or a gangrene will speedily ensue: it was before said, in Sect. 432, how difficult the cure of that is: hence a large quantity of blood must be immediately drawn, and the bleeding repeated, if needful, that the penis may quickly fall or shrink from its erection. In an urgent case, such as when the vein in the back of the penis excessively swells, it must be

pierced by a lancet at the same time that blood is let from the arm. I also gave the patient two ounces of a purging decoction every hour, which was composed of *tamarinds*, *sena leaves*, *agryrick*, *polychrestes salt*, &c. until the patient was almost worked to death, and the swelling of the penis began to abate. I have for some days supported an artificial diarrhoea by this same remedy, but still by giving a less quantity of it; then a flux began to distill from the penis of green gonorrheal matter, and indeed very copiously; so the patient escaped the threatening danger of a putrefaction and mutilation of the penis: that and its adjacent parts were covered with a pultice of the nature of the most emollient fomentations, and some additional antiseptics first used; that pultice was perpetually applied by night, consisting, according to the form in *Materia Medica*, of sower butter-milk, which efficaciously resists all putrefaction; to this were added some spirits of wine, or some other aromatic spirituous liquid, that the affected parts might not be too much weakened by an assiduous fomentation; for the spirits, if not excessively diluted, are of themselves injurious, so that scarcely a thirtieth part of the-riacal spirits of wine is mixed in this pultice. I have seen the penis of a young man swollen in a most shocking manner, through a large quantity of spirits of wine applied by an imprudent ignorant barber, who thus attempted to cure him of a new flowing gonorrhea; another more prudent person was then called, who heartily applied antiphlogistic remedies to the patient, and a pound or more of blood broke forth from the penis; then the tumour subsided, and the day following a foetid dreg-like flux, streaked with blood, issued forth; yet he was entirely cured of this evil in the space of three months. It is manifest, that the pendant and loose prepuce is furnished with no muscular fibres, but with a cuticula and a thin skin; it also consists of

a slender

a slender cellular membrane exceedingly dilatable, which never collects any fat or thickness but in such as are castrated; its texture is nervous and vascular. Wonderful tumours are formed in the cellular membrane of the prepuce; they become as it were pellucid and inflated, cover the whole glans, and project beyond it; such a tumour is then called a *phymosis*; that is, when the swelling prepuce cannot be drawn back, nor the glans uncover'd by it: but when the prepuce is withdrawn behind the glans and is inflated by a similar pellucid tumour, it swells and surrounds the penis with a turgid ring round the corona of the glans, which projects naked beyond that ring, so that the prepuce cannot then be drawn forward so as to cover the glans, then it is called a *paraphymosis*; of which more was said in Sect. 1449.

In this case the penis is said to be inflated, though the tumour adheres not in its cavernous bodies, nor in the cavernous body of the urethra, but only in the prepuce; such a tumour often exists without any inflammation, so that it requires not always an antiphlogistic cure; but certain it is that such tumours, when increased by any pressure, may inflame the glans, particularly in case of a paraphymosis, and so produce many worse evils, which the eye cannot discern; for as the glans cannot be uncovered, nor the internal superficies of the swelling prepuce which is twisted in a wonderful manner become conspicuous, some alarming fears must always attend it: this notwithstanding appears to be remarked, that if neither heat, inflammation, or other concomitant signs are found in the part affected, such tumours indicate not the necessity of a powerful antiphlogistic cure.

It also appears, that men who had been circumcised, skinned or ulcerated, so as that the prepuce perpetually adheres withdrawn behind the glans, never

never suffer by a phymosis, and but seldom by a paraphymosis.

There may be often a phymosis whilst a venereal ulcer corrodes the glans of the penis, or the internal superficies of the prepuce; and so great a tumour is sometimes bred there, that the swelling prepuce is tormented so as to obstruct the free discharge of urine, whilst the ulcerous matter also retained between the prepuce and the glans, becomes more acrid in its delay, and deeply gnaws those tender parts it washes; from whence the severest evils are to be dreaded, unless a speedy exit can be prepared for the retained corruption: the best method for that purpose is to inject pure lukewarm water lightly through a funnel between the swelling prepuce and the glans, frequently every day, and so wash away the filth; for even the mildest detergent remedies so increase the pain, that they cannot be endured: let the penis be wrapt up in the most emollient fomentations and pultices perpetually, that every kind of inflammation may be guarded against; but if that should be the case, let a little more of the spirituous liquor be added, lest the tender cellular membrane should be wasted by the perpetual fomentation, and dissolve into gangrenous corruption whilst it begins to fall down.

When I had tried all these endeavours of art upon a young nobleman, labouring under a very malignant phymosis, more than fifty little ulcers broke out in that part of the skin, and discharged a great quantity of venereal corruption, whilst still a greater quantity of such-like matter flowed out from between the prepuce and the glans; the severity of the evil had instilled a dread of a mutilation, but as his strength had not forsook him, and as so much danger had rendered him an obedient patient, he escaped safe from it.

We are indeed instructed by some authors to introduce a slender tube, of lead or silver, into the
urethra,

urethra, that the urine may more easily flow out if attended with pain, or regurgitating under the prepuce, and to let it remain there; but still it is to be sometimes removed that the channel of the urethra may be explored, and the adhering filth washed away:* but those who have more frequently seen those diseases well know, that the prepuce so swells by a violent phymosis, and becomes writhed in such a wonderful manner, that it is hardly possible to thrust this tube into the urethra before the swelling begins to abate in the parts affected; nor can that be attempted without augmenting the pain and ferocity of every attendant evil. I have attempted to remove such a strong inflammation first by bleeding, often repeated, and then by large evacuations by antiphlogistic purges; thus have I gained upon these humours to subside so as that a commodious opportunity for cleansing or washing all filth away from the ulcers may be afforded; yet I used the mildest sort of remedies, fearing, that an application of the more acrid would renew the evil: the more prudent step is, that the patient † should keep to his bed when the disease is more pressing, and in such an easy position as that the remedies or dressings may be changed and stay on the penis, which is then chiefly to be bound up to the belly; which is, according to the opinion of Celsus, ‡ very necessary in such a case; for, as he both saw and described those diseases, though not bred from a venereal contagion, he thus says, *Si ex inflammatione coles intumuit, reducique summa cutis, aut rursus induci, nequit, multa calida aqua fovendus locus est, &c; isque homo continere se, & abstinere a cibo, debet, & potione aquæ tantum a siti vindicari*: “ If the penis, swelled by
 “ an inflammation, admits not the skin or prepuce
 “ to be withdrawn or drawn forward again, the
 “ place

* Astruc de Morb. Vener. Lib. III. Cap. VIII. p. 261.

† Ibidem, p. 260.

‡ Lib. VI. Cap. XVII. p. 393.

“ place affected is to be fomented with much warm
 “ water, and the patient ought to contain himself
 “ quiet, abstain from flesh meat, and only drink
 “ water to quench his thirst :” thus he ordered the
 patient to low diet, and mild fomentations of water.
*vi quoque experiundum, an cutis sequatur. Eaque, si
 non parebit, leviter summa scalpello concidenda erit.
 Nam, cum sanies profluxerit, extenuabitur is locus, &
 facilius cutis ducetur :* “ and that force must be used
 “ in trying to move the prepuce ; then, if that will
 “ not do, it must be cut at top with a knife ; for as
 “ the corruption then flows, the part will be exte-
 “ nuated, and the skin will be more easily drawn
 “ on and off the nut of the penis.”

But it is granted, that a phymosis and paraphy-
 mosis, as before said, may be frequently bred in
 found children without any venereal contagion,
 either through a retention of urine between the
 streightened prepuce and the glans, or through some
 external injury by friction, or a contusion, &c. for
Celsus * farther adds, *Sive autem hoc modo victa erit,
 sive nunquam repugnaverit, ulcera, vel in cutis ulte-
 riore parte, vel in glande, ultrave eam in cole, repe-
 riantur :* “ But whether the injury will be van-
 “ quished by this method, or if it never before at-
 “ tacked the part affected by an ulcer, the phymo-
 “ sis and paraphymosis are found in the penis, either
 “ in the hinder or outer part of the glans.” He
 afterwards prescribes various remedies for curing
 these ulcers.

If the inflammation yields not to the application of
 proper remedies; and as a pressure and suffocation
 of the glans beneath are to be feared from the
 swelling prepuce, some authors § order the pre-
 puce to be split by scissars or a knife, at either or
 both sides of the glans, that it may be freed from
 that stricture. The celebrated *Astruc* makes less ac-
 count

* Lib. VI. Cap. XVIII. p. 392.

§ Astruc de Morb. Vener. Lib. III. Cap. VIII. p. 263.

count of this matter, for he would have either the scissars or knife used at discretion; but it appears, that the knife is to be preferred, for the scissars always bruises, more or less, in cutting, but the place inflamed is so very sensible, that the incision causes much pain at any rate, which vanishes not very soon after; but it is justly to be feared, that the inflammation should be thus increased, which I have known to happen. It was demonstrated in Sect. 405, how dangerous and unprofitable it is to cut that inflamed part. I sincerely confess, I never advised a fissure of the prepuce when occupied by a violent tumour, nay, I even contradicted such an operation as much as possible: I could always make the tumour subside, and perfect a cure, by a spirited application of antiphlogistic remedies; for when the prepuce was greatly swelled, and but a little or not at all inflamed, I applied the *acid of Litharge*, diluted in two hundred parts of water, by way of a fomentation, with success. If in such a case it should happen, that a suffocation from the mass of the tumour, or a suppression of urine should be dreaded, then *Celsus's* method would be preferable to a deep incision, as it was just now said, that he would only have the top of the prepuce split, till the flowing of the matter should be diminished.

The celebrated Alexander Monro * collected some medicinal cures which happened contrary to expectation, amongst which is the following:

A sound middle-aged man had greatly suffered by a contusion in the extremity of the penis; that part of the prepuce, which constituted the *frœnum* of the glans, arose into a crystalline large tumour; some aromatic fomentations and fumigations were locally applied, and purges were given, but the tumour decreased not; a slender bristle was drawn through

* Medic. Essays and Observat. Vol. V. Part. 2. No. 47. p. 494.

through the tumour, so that way might be made for the distending watery liquid to run out: but the event deceived the conceived hope, for an acute pain and violent inflammation ensued, so that the bristle was obliged to be drawn out again, and a pul-tice of bread and milk applied to the part; the tumour was greatly diminished the day following, entirely disappeared the next day, and returned no more.

If thus lightly piercing the swelling prepuce by a hair or bristle produced such an acute pain, and so violent an inflammation, it still appears, that yet worse must be dreaded from a deep incision of such a tumour.

It sometimes happens, that these inflammatory tumors of the penis, being treated by copious bleeding, only are dissolved, and the schirrus remains; but this chiefly if, in the decline of the malady, spirituous applications are used, which, from the natural flaccidity of the parts, only serve to increase the malady. The prepuce of an imprudent man remained, during his life, as thick and hard as a cow's hide, by fomenting that swelling part with spirits of wine and camphor, without the advice of a physician: when this evil is still recent, it can be amended, and sometimes even vanquished entirely, if at night the fomentation is made of six parts of wine and water, one of vinegar, adding a dram of sal ammoniac to every pound of this fomentation: In the morning after a light friction let the part be covered with *emplastrum de Mucilaginibus* or of *Melilot*: such cases are not rare in town. The celebrated *De la Peyronie* often observed such a hardness in the cavernous bodies of the penis, which resisted the power of crude mercury, but they happily yielded to the Baregian waters, after the venereal contagion was first totally worked away. The application of the waters

was

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was external for a long while. It is believed,*
that (la douche) a dye made of the ashes of green
wood, supplies the defect of these waters.

S E C T. MCCCCLXI.

A Venereal buboe is cured by dissipating
it by plasters, by suppurating it; and
if these prove fruitless, it must be opened
and cleansed by purifying remedies.

The buboe was before treated of in Sect. 1448,
and the signs by which it is distinguished from other
tumours which occupy the groin, and sometimes
occur in other diseases, were given.

It is sometimes observed, that buboes yield to
dissolving remedies without much difficulty, yet they
frequently adhere a long time, verge to a very slow
suppuration, are but tedious in coming to maturity,
and degenerate into ulcers sufficiently difficult of
cure, which they render very tedious, as they some-
times harden into a schirrous which grows rebellious
even against the best remedies.

If a dissipation of a buboe can be obtained, it is
mostly desired by many; but as the venereal con-
tagion exists in the buboe, many have also from
hence feared, that a confirmed venereal disease would
proceed, if the contagion should be mixed with the
blood, by dissipating the tumour.

Antonius Musa Brasavolus,† who was formerly very
famous in curing the venereal disease, doubted *numquid*
immaturus aperiri debeat ejusmodi abscessus, an ultima con-
coctio sit expectanda? ego semper immaturum potius in-
cidi

* Mem. de L'Acad. de Chirurg. Tom. I. p. 428, &c.

† Aphrodisiac. p. 684.

cidi voluerim; non tamen penitus immaturum; ne ob dolorem inflammatio exoriatur: imo, si incisio etiam fieret, antequam pus adesset, conveniret. Nam malum non est, ut aliquis adsit dolor, ob quem materia ad locum trabatur, & decurrat; postea apertum servetur, quantum fieri poterit, ulcus: “whether an
 “abscess of this kind should be opened before it
 “came to maturity, or whether the last digestion of
 “it was to be waited for? I always would have it to
 “be cut when in a state of immaturity, yet not
 “entirely so immature, lest an inflammation should
 “arise from the pain; still, if the incision should
 “even be made before the matter was collected
 “there, it would not be inconvenient; for some pain
 “is not hurtful, as it draws and makes the matter
 “run to the place affected; the ulcer is to be kept
 “open as much as possible afterwards.” Many were
 not only of that same opinion afterwards, but
 opened those buboes which were hard and inflamed,
 to the racking torment of the patient; they cut
 through the whole length of the tumour, that the
 more way might be prepared for the received conta-
 gion to flow out. *Brasavolus* nevertheless ordered
 to beware of cutting the bubo when totally imma-
 ture; though still he would not have the ultimate
 digestion of the hard tumour waited for.

Where *Galen* * treats of the cure of an inflamma-
 tion bred in glandular flesh, he condemns the speedy
 aperture of such tumours. *Quin, si pus aliquod no-*
tabile in suppurante parte sit contentum, non expedit
(quod nonnulli faciunt) protinus incidere, imo discussi-
onem moliri medicamentis ad id valentibus, quorum usus
ex affectu sit conjectatus. Quum enim phlegmones quid-
quam in parte restat, acria medicamenta potius irritant,
quam discutunt. Quum vero, quod ex phlegmone re-
linquitur, scirrhosum effectum videtur, fidenter jam va-
lentibus medicamentis uteris: “But if any remarkable
 “cor-

* Method. Med. Lib. XIII. Cap. V. Chart. Tom. X. p. 298.

corruption should be contained in the suppurating part, it is not expedient to cut it immediately as some do, but that a dissolution of it be laboured for by the application of powerful remedies, whose use may be conjectured by their effect: for when any kind of inflammation rests in the part, acrid medicines will rather irritate than dissolve it; but when any relict of an inflammation is seen to produce a scirrhus effect, you may then confidently make use of strong remedies." He orders the part affected to be diligently inspected morning and evening, that some emollient remedies may be applied to it when the swelling, pain, or hardness of it increases; and, on the contrary, to apply more powerful medicines to it, *si scirrhusiotes legmonæ sint. Sin aliquando puris copia medicamenta peret, nec ea videantur tibi totum discutere posse, are, quod sic abscessit, eo potissimum loco oportet, quod est editissimum; quippe tenuissimam etiam illic iniuries cutim*: "if the inflammation becomes more scirrhus: but the quantity of matter may sometimes vanquish the medicines, nor must a possibility of dissolving the whole appear to you; cut therefore what thus grows into an abscess, particularly in that part which is most prominent, for you will also find the skin very thin there."

I have known some who maintained a contrary opinion, and urged, that it might be possible that *len* had not known the venereal disease, so that what he said concerning the cure of buboes may bear authority in treating of venereal buboes: as it particularly may be required in this case, that the more the received contagion adhering fixed in the bubo is to be expelled from the body, the greater incision is for that reason to be made in the place selected; but that infectious contagion adheres to the hard part of the bubo as well as to that which readily grows into maturity, or in that small share of corruption already formed, and longer left there,

that it might gradually dissolve that ambient hardness, and change it into corruption also: but when buboes are soon cut, the contingent air renders their maturity much more difficult; nor do they seldom degenerate into a scirrhus whilst that hardness much longer adheres in the part.

Fallopious * strongly inveighed against those who cut crude buboes; but he orders the mature ones to be cut through the whole length, as far as they run along the groin: *Laudat tamen magis causticum; quia per illud auferimus quantitatem corii, & fit latius ulcus, nec remanent cavernæ*; “yet he rather recommends a caustic, because we by that method carry away a quantity of the skin, and the ulcer becomes broader, nor will the cavities remain;” namely, of the hollows and fistulas, which are exceeding hard to be cured: for that reason he would not have a buboe remain closed when advanced to maturity, until its integuments are spontaneously opened by the corroding matter, and some other little openings from whence fistulas are likewise to be dreaded; and *Botallus* advised the like.†

For very grievous evils, bred from buboes and fistulas, are from hence to be feared, if they verge to a depth so as that they cannot totally be cut out: for the corruption sometimes becomes virulent and forms a gangrene, which creeps toward the abdomen, and the arteria cruralis, sometimes corroded by such corruption, suddenly occasions an hemorrhage. The celebrated *Goulard* ‡ avers to have known two soldiers thus perish. As therefore these celebrated men, *Boerhaave* and *Astruc*, with many others, have attempted to dissolve these buboes in their first appearance, and, lest that should not succeed, brought them to a suppuration, but never cut hard, crude, inflamed

* De Morbo Gallico Cap. XCI. Aphrodis. p. 821.

† Aphrodisiac p. 873, 874.

‡ Remarques & Observat. prat. sur les Malad. Vener. Sect. 71. p. 106.

flamed buboes ; I, by following the traces of such great men, and from my own observations, can confirm their method of curing them.

I have attempted to dissipate recent buboes of no great bulk with efficacious plasters, called the feru-
ceous gums, such as *galbanum*, *ammoniacum*, *sagape-
um*, and such-like; all which singly or compounded
are remarkably powerful, and are, with many more
of the same kind, to be sold in the shops by that name.
Emplastrum de Ranis, so called in the shops, is very
much recommended for this purpose, particularly
that to which crude mercury is added, and that too
in a variable quantity, from whence it is called *Em-
plastrum de Ranis*, with mercury duplicated, tripli-
tated, &c. Still it is to be noticed, that a salivation
is often brought on by this plaster, when a large
quantity of mercury is mixed with it, which must
be carefully minded, as such a quantity is not al-
ways requisite.

Buboes are not often easily dissolved, and when suppuration is required, they are but very difficultly brought to maturity; hence we see that all such remedies as commonly adhere strongly to the skin have been applied, but still have an aromatic efficacy and a dissolving power in them, for which reason they are usefully applied to other tumours of an obstinate nature; and shoe-makers wax or pitch possesses both these virtues of the ferulaceous gums; but it is useful to shave off the hairs about the groin first, lest they should occasion great mortification in renewing these plasters, for they are to be renewed. In the *Materia Medica* there are two forms of such plasters described, to which it is to be added, that a large quantity of *flower of sulphur*, is added; and in the one above one fourteenth of the whole mass consists of *saccharum Saturni*, then in the other which has the shoe-makers pitch for its base, only one 21 of the whole, is in like manner of

S 2

sugar

sugar of lead, which, as it is well known, is prepared from lead, and its calx corroded by vinegar.

It was the common opinion that there is a styptic repellant power in sugar of lead; hence many had formerly condemned these prescriptions; but *Goulard*,* with great success, applied a solution of lead greatly saturated in vinegar, which he calls an *extraët of Saturn*, for curing of venereal buboes; he diluted that in two hundred parts of pure water, and applied it in the manner of a fomentation, (this he calls *aqua vegeto mineralis*) or boiled the crumb of bread in it for a pultice, and he prepared the *extraët of Saturn*, by waxing it over by way of a cear-cloth: he applied such remedies as these to buboes, by which they were dissolved, though they had been of a great bulk, and a fluctuation of matter had been felt, copiously passing through the pores of the remaining entire skin, which daily moistened all the apparatus.† He confirms the truth of this assertion by proper witnesses.

If the buboe should obstinately resist the hoped-for dissolution, and increases rather than diminishes in bigness, then a removal of it must be thought of by a suppuration; the remedies requisite for bringing it into a mature abscess were before mentioned, in Sect. 403, where this matter was treated of; but let those remedies, which powerfully soften and bring a buboe to maturity, then dissolve it by a moderate heating stimulus driven into the part be chosen: the manner of making this suppurating pultice, according to the *Materia Medica*, is this; let soft ripe figs a long time boiled in water, until they are changed into a pulp, be the foundation of it, to which let honey and gum galbanum, first dissolved in the yolk of an egg, be added, so that it may equally be distributed through the whole mass of the pultice,

* Remarques & Observat. prat. sur les Malad. Vener. Sect. 71. Cap. III. p. 99, 111, &c.

† Ibidem, p. 118, 119.

pultice, which will be of excellent use if applied to the naked skin, and covered with a pig's bladder, cut so as to fit and lie upon it, that it may be still softened by anointing and rubbing it with oil of almonds; thus the humidity of the pultice, and fragrance of the galbanum, are obstructed from dissipating outwards; but it must be ordered so as that the pultice will perpetually operate upon the buboe, for so its maturity will be much sooner obtained. Great care must be also taken that the shirt or bed-cloaths be not fouled by this pultice, which is to be renewed morning and evening.

It plainly appears from the prescription of this pultice, that many more such-like may be composed by variety of ingredients which have the same efficacy in them. When the buboe grows to maturity, let there be way prepared for the contained corruption by an incision, that it may not only flow freely out, but that an opportunity may be had of applying various acrid and deterging remedies to the foul bottom of the buboe, that it may be purified and then healed.

This the reason why a buboe when softened is cut out according to its whole length and breadth or ambit, rather than only pierced by a small opening; that done, the adjacent parts must be sedulously explored, by pressing the fingers to try whether any caverns or fistulas occur in the ambit of the ulcer, that these may be also cut away if possible with safety; and thus a cure will be obtained, which would otherwise be protracted to a longer date.

Strong cleansing and even corroding remedies are usually and prudently applied to the bottom of the ulcer, that a light crust, which sometimes may be bred there, may be easily separated as the suppuration increases and leaves the bottom more pure. Let those places already purified be covered with soft digestives, whilst more acrid remedies are spread on those which are still filthy. There is a powder

described in the *Materia Medica* for this purpose, consisting of two ounces of the leaves of *scordium* powdered, two drams of *white vitriol*, and one dram of *aloes* mixed. Some others apply yet more acrid remedies, composed of mercurial precipitates. The celebrated *Grasbuis* published a dissertation concerning the generation of corruption, which was crowned with the approbation of the royal academy of surgery, and to which they added notes, wherein * the following opinion is testified: *Bubones Venereos, difficulter suppurantes, escharotico applicato, ex Mercurio sublimato, brevissimo tempore in tabum purulentum liquefcere, docuit experientia*: “ Experience hath taught that venereal buboes, suppurating but with difficulty, dissolve into purulent matter in a very short time by an escharotic application of sublimated mercury;” yet there is need of a great deal of prudence for administering that remedy, and also in its external use. We read a horrid case in *Degenerus’s* † dissertation annexed to the history of the *Dysenteria Neomagensis*, where a noble matron, having a rising tumour in her thigh, was persuaded by an unskilful quack to suffer a caustic plaster to be applied to the pained part; this matter being afterwards examined, the plaster was found to have contained a large quantity of corrosive sublimated mercury interspersed with it: the like plaster had been three times applied by the impudent persuasion of this imprudent fellow; from whence the unhappy patient, after suffering the most intolerable tormenting pain, fell into a salivation and was suffocated. I trembled at reading of *Fallopious’s* ‡ treatise of buboes, because he says, that to a buboe already opened, *aliquando inspergeret pulverem, ex arsenico, & auripigmento*: “ the powder of arsenic and orpiment.”

* *Remarques & Observat. prat. sur les Malad. Vener. Sect. 7. Cap. III. p. 100.*

† *De Dysenteria bilioso-contagiosa, p. 234, & seq.*

‡ *De Morbo Gallico Cap. XCI. Aphrodisiac. p. 82.*

“orpiment may be sometimes applied.” Certainly a decoction of arsenic is recommended by some for curing the itch, and to be applied by a simple washing. Two soldiers, having got some of the decoction of arsenic from a little old woman, washed the places infected by the itch with it, the itch indeed vanished by this lotion, but *utriusque genitalia tanta inflammatio, atque intumescencia, invasit, ut adspectu horrendum esset; quibus conjuncti erant intolerabiles dolores, vehemens febris, sitis, vigiliæ; totusque locus affectus brevi tempore tantam contraheret nigredinem gangrænosam, ut de perfecto sphacelo jam sollicitus essem.** “such an inflammation and swellings invaded the genitals of these two men, that it was a most shocking sight; to these were joined intolerable pains, a violent fever, thirst and want of rest, and the whole place affected contracted such a gangrenous blackness in so short a time, that I was then dreadfully apprehensive of a perfect sphacelus.”

A separation of the mortified parts was obtained by the care of *Degnerus*, and the sphacelated wretches were by slow degrees restored to health; yet the decoction of arsenic was not applied to the genitals, but to other itchy parts of the body; which would not be feared if powder of arsenic should be strewed upon the ulcerous superficies of the cut buboe.

The opened buboe ought indeed oftener be treated as a filthy ulcer, that it may be well cleansed and then brought to a scar; but this should be acquired by the assistance of safe remedies, that the physician's reputation and the patient's health should not suffer by it.

As to the rest, a buboe when under skilful hands admits little or no danger, though sometimes the cure is tedious. If a buboe soon arises from recent suspected venery, after venereal ulcers had been in

* *Degnerus de Dysenteria biliofo-contagiosa*, p. 214, 215.

the genitals, and after a gonorrhea but sparingly flowing had stopped, without good signs of its amendment, the cure may be hoped to be much happier and shorter; for the flux of the gonorrhea being augmented, and the venereal ulcers pouring out much corruption, the buboe, as I have seen, often subsides in its beginning, without any subsequent venereal disease: let those directions in regard to diet, as well as to the cathartic remedies recommended in Sect. 1458, for the cure of a gonorrhea, be also followed.

But when a buboe has been long unskilfully tampered with, it comes to a great bigness, and remains unchangeable in spite of an application of even the best remedies; then it requires the same cure that the venereal disease does, as will be said in Sect. 1467, especially if the other signs of the confirmed Lues accompany it. If it degenerates into a scirrhus hardness, it sometimes obstinately resists a salivation by mercury; but when a buboe has not acquired a stoney hardness, the celebrated *Astruc* reposes some hope * *aquarum thermalium super bubonem embrochen iterando, inguen morbosum stillicidio aquæ fluentis supponendo, demum tumori limum, qui in aquæ fundo colligitur, apponendo quotidie, ut coagulata limpha sensim liquefiat, & tandem resolvatur, &c. caute tamen opus est; ac, si bubo inde rarefcere, calefieri, dolere, incipiat, Thermarum usu statim absteineat, ne scirrhus in Carcinoma degeneret*: “ in a repeated water-
 “ ing the buboe with Bath or mineral waters, by
 “ laying the infected groin under the spout or drip-
 “ pings of the running water, and finally, by daily ap-
 “ plying the mud found at the bottom of the water to
 “ the tumour, and holding it there until its coagula-
 “ ted parts are dissolved; still there is need of great
 “ caution; for if the buboe should begin to decrease,
 “ grow hot and painful, the use of the baths must
 “ be

“ be immediately abstained from, lest the scirrhus
 “ should degenerate into a cancer :” he prefers the
 Baregian waters to all others ; the defect of which,
 as I have before-mentioned, can, according to the
 opinion of the famous surgeons of France, be sup-
 plied by a lye made of green wood ashes : it seems
 probable, that other baths may not fruitlessly be
 tried. I formerly, for the sake of exercising a prac-
 tice in places to which no baths or mineral waters
 were contiguous, have endeavoured at an imitation
 of them by art ; I have therefore impregnated water
 with sulphur and the filings of iron, and let it fall
 from the height of twelve feet upon the affected
 parts of the body, nor did it unsuccessfully fall.

I have upon another occasion mentioned, from the
 observations of *Ruyfchius* * in Sect. 1228, that by
 cutting the venereal buboe before it arrived to per-
 fect maturity, the lymphatic vessels had been cut,
 from whence a great quantity of water daily flowed ;
 that skilful anatomist, by laying of splints tight-
 ly bound under the part affected, repressed the
 course of the water through the ascendant lymphatic
 vessels, and happily cured that troublesome di-
 stillation.

S E C T. MCCCCLXII.

A Testicle when swelled is to be fomented
 in the manner explained in Sect. 1460 ;
 if the case is urgent, blood must be repeatedly
 drawn from the arm until the part affected
 plainly returns to a natural state.

A tumour of the testicle bred from the venereal
 disease, or at least from a venereal contagion, was
 before treated of by many circumstances in Sect.
 1450 ;

* Observat. Anatom. Chirurg. No. 41. p. 40.

1450 ; it then appeared, that a venereal virus is not requisite at all times for producing such a tumour of the testicle, so as to penetrate its substance ; but that it is sufficient, if a free discharge of humours be prepared in the wonderful fabric of the testicles, when obstructed by any cause whatsoever : it was also remarked, that a tumour of the testicles most frequently follows from a suppressed gonorrhea, or from a less copious flux of it than usual, as also from an imprudent use of acrid diuretic hot remedies : from whence let the patients be therefore guarded against the use of irritating diuretics as the flux returns ; such are balsam of sulphur, æthereal oil of turpentine, &c. but the tumour of the testicle usually subsides, and is entirely cured in a short time, if proper remedies are applied to the evil whilst it is recent, otherwise an inflammation and all its train of evils are to be dreaded.

If therefore a testicle should begin to swell, and the tumour be soon increased, grow hot, the skin of the scrotum be extended and reddened, with a fever attending it, it is to be immediately succoured by a copious bleeding, which should be repeated until the symptoms are much diminished. Let a purging and sufficient operating antiphlogistic be then given, whose compositions are various, according to the *Materia Medica* in Sect. 396, No. 2, where the cure of an inflammation is treated of ; let the scrotum be wrapt up in fomentations the most emollient, to every pound of which add a dram of sal ammoniac, and an ounce or two of vinegar. Sydenham* cured a tumour of the testicle, though not a recent one, by the same method : *Neque mihi religio est, quocumque hujus mali tempore sanguinis uncias, novem vel decem, e brachio isto detrabere, quod testiculo tumefacto respondet, si tumoris magnitudo, & vehementia doloris, id mihi suadeant* : “ nor do I make any scruple of drawing “ nine or ten ounces of blood from that arm or

“ the

* Epist. II. Respons. p. 425.

“ the same side of the swelled testicle, in any time of
 “ the evil, if the magnitude of the tumour, and the
 “ vehemency of the patient’s pain urge me to it;”
 for a dissolution of the swelling in the testicle is to
 be attempted by every method, that other discharges
 of an inflammation may be avoided, which are here
 often dangerous and always difficult to be cured:
 from whence *Sydenham* recommends a fomentation of
 emollient remedies, by adding the leaves of *henbane*
 thereto, which mollify the acute pains often accom-
 panying the tumour of the testicles by a local ap-
 plication; he applied a pultice of *oxycratum* and *bean*
meal to the tumour; he also used cathartic and re-
 freshing remedies, and enjoined the patient to more
 slender diet for vanquishing the disease; he also or-
 dered a plentiful share of nitrous diluted emulsions,
 to be drank as a safe-guard against a venereal
 erection of the penis, which is to be feared in this
 case.

The weight of the swelled testicle pulls upon
 the spermatic chord, and so produces very great
 pain; hence the patient is required to lie in bed,
 for so the testicles will be supported, the fomenta-
 tions will be more commodiously applied, and can
 be more easily renewed at will. When the tumour
 of the testicle is by these means diminished, it should
 be sustained by a proper bandage, that the patient
 may safely rise out of bed; the scrotum is then also to
 be covered with a soft *emplastrum mucilaginum*, *diapom-*
pholygos, &c. see the prescription in the *Materia Me-*
dica for this purpose. Many use *emplastrum de ranis*
with mercury to the same end; or mercurial unction,
 with which they rub the swelling testicle; but still
 a schirrhous hardness is to be dreaded after the in-
 flammation is already much diminished: but the
 mercurial friction is continued until a light saliva-
 tion is brought on, which has been profitable;*

others

* Hoffm. Med. ration. & systemat. tom. IV. part. V. p. 184.

others have used powerful mercurial purges, particularly *turbith mineral*, nor would that be unsuccessful if the evil had been recent, and the dread of a suppuration removed by bleeding and the antiphlogistic method.

If the suppression of a gonorrhea should precede the tumour of the testicle, a sudden dissolution is to be hoped for, and that a copious flux will also return through the urethra; therefore this flux is to be incited, as was before mentioned concerning this matter in Sect. 1458.

I have known the external and internal use of cicuta to have proved very beneficial whilst a scirrhus hardness remained in the testicle after an inflammation of the same. A gonorrhea being suddenly suppressed in a man of forty-seven years of age, by an astringent injection, a hard scirrhus tumour, bigger than a man's fist, arose in the scrotum, yet both testicles were free and sound: that tumour remained for a year and a half, for every attempt of removing it by plasters, fomentations, the strongest mercurials, and even a salivation proved fruitless: the extract of cicuta was given to him, and the dose was successively augmented; though he had taken an entire dram of the extract of cicuta, then on the twentieth day of taking it, there was no change of the tumour observed: on the thirtieth day he took a dram and a half of the same remedy, and the tumour began to soften in three days after; then a purge, wherein mercurius dulcis was mixed, was given: after forty days the patient took two drams of the extract of cicuta every day, and the tumour diminished: he continued this dose for five months, still interposing a mercurial purge every fourteen days: the tumour was then totally dissolved, and the man entirely sound; but he plentifully drank a decoction made of the roots of Bardana * during the time of the cure.

S E C T.

* Anton. Störck de Cicuta, tom. II. p. 169, 170.

S E C T. MCCCCLXIII.

AND pustules, called shankers, are to be corroded to the quick by mercurials; then they are gradually healed by milder remedies of the same kind.

It was before said, in Sect. 1444, how these pustules are to be known and distinguished from other evils.

It is easily understood, that there is need of great caution in treating these evils; for it is evident from what has been before said in Sect. 1445, that the venereal virus adhering in the external parts of the skin, which produced venereal pustules or shankers there, can be dispersed throughout the body from these affected places, and create the worst of evils.

Some have believed, that the whole evil could be carried away, if these suspected pustules, called venereal shankers, had been totally destroyed; which was attempted by strong escharotic remedies, with this hope, that the contracted virus, together with the integuments of the skin to which it adhered, should be converted into a dead scab.

Such a cure formerly succeeded in case of similar evils, not bred from a venereal contagion, but from other causes in the genitals of both sexes. *Lanfranc*, that formerly celebrated surgeon*, who wrote about the year 1296, and about two hundred years before the venereal disease was known in Europe, used a *collyrium* (which takes its name from him) for curing the ulcers of the penis: that remedy consisted of one pound of white wine, a dram of verdigrease, and two drams of auripigmentum, which afforded a sufficient acrid

* Le Clerc histoire de La Medicine, p. 790.

acrid local remedy. Other authors, who treated the like evils bred in the genitals by a venereal contagion by the like method, attempted to extinguish the contagion in those places where it manifested itself by a pustule or little ulcer.

So *Joannes de Vigo*,* in his treatise of the cure of the venereal disease, says; that the cure is to be perfected by the administration of local remedies. *Imprimis veniendo ad originem morbi; videlicet ad pustulas, quæ solent accidere in virga; dico, quod, ex quo istæ pustulæ (ut superius dictum fuit) non eveniunt nisi a causa primitiva, sine aliqua temporis intermissione protinus medicamine acuto, malignitatem earum interficiente, sunt delendæ, ut exinde earundem malitia per totum corpus non extendatur:* “By first coming
“at the origin of the disease, namely, at the pustules which usually happen in the penis; I say
“so because these pustules, as was before said, come
“not from thence, unless by a primitive cause;
“then, without any intermission of time, they must
“be immediately worked away by an acute medicine, capable of destroying their malignity, that
“it may not be afterwards spread throughout the
“whole body.”

But we can never be absolutely certain whether the received contagion may adhere to this pustule or ulcer only; for a part of the contagion could have been easily absorbed by the absorbent veins, and have already infected their mass, whilst another part of it is entangled in the vessels, or cutaneous folliculi, and there produces a local evil.

For it appears from what has been hitherto said, that the venereal virus oftner infects the whole mass of blood, though no eruption may appear on any part of the skin, until it in some time after declares itself in spots and pustules there, and that often with a great releasement from pains, by which the wretched patients are tormented, when the evil is deposited

* *Aphrodisiac*. p. 452.

deposited in the skin by a metastasis or removal; but although there might be some hopes of destroying the local contagion, with a part of the integuments, by escharotic applications, where the rest of the body is as yet uninfected; this fortunate event cannot be expected when the infection, circulating with the humours of the body in the vessels, and afterwards thrown upon the skin through a metastasis, has produced pustules and venereal ulcers; for it appears from what has been said in Sect. 1442, that some pustules and venereal shankers, are produced by a topical application of the virus, and others from the distemper translated to the skin by a metastasis; and in such a case the local application of remedies can never be safely considered in.

Joannes de Vigo* distinguished this matter also by joining the following opinion to what has been just now quoted from him. *Secus faciendum esset, si prædictæ pustulæ ortum accepissent a causa antecedenti; quia (nisi facta universali purgatione) localia auxilia, ante corporis purgationem, regulariter operando, non essent applicanda:* “It is to be performed in another manner if the foresaid pustules had received their birth from an antecedent cause, because (that unless an universal purgation be made) no local aid is to be applied before the body is regularly purged;” but a corrosion of venereal shankers, and that even to the quick, is often seen to have unfortunately happened under this author’s hands by corroding remedies; for he confesses, that he ought sometimes to have repeated that corrosion; *quia interdum hæc pustulæ sanabantur, & iterum ad crepationem veniebant, cum malignitate carnis; unde operæ retium fuit, sæpenumero curationem renovare:* “because these pustules were sometimes healed and burst open again with a malignity of the flesh, “ from

* Aphrodisiac. p. 452.

“ from whence it was as often worth while to renew
 “ the cure of them.”

Whilst this corrosion is attempted, the place affected grows into a scab, under which the contracted virus, which had been absorbed by the veins, often lurks, infects the whole body, and manifests itself in a short time in many more places of it: this I remember to have happened to a young man of a perfect sound body, who had contracted a venereal ulcer in the exterior side of the skin of the penis after impure venery. A surgeon, boasting of a certain and speedy cure by destroying the local evil, touched it with lapis infernalis; but it fell out quite otherwise, for in four days after, the patient's face was foully spotted over with foetid warts, which were in a short time after dispersed also all over the body; he was also tormented with nocturnal pains in all the ligaments of his joints, and he began to feel a pain in his jaws; from whence the miserable patient, fearing some worse evil, underwent a severe salivation, that he might be radically cured. And *Vigo* * had the same ill success after a corrosion of such venereal pustules; for he acknowledges, that though he, by his method, *malignitatem ulceris, & pustularum, interficiendo, locum ulceratum, vel pustulosum, ad digestionem materiei benignæ, & mundificationem loci, cum purgatione multarum materierum, perduxisset, tamen, post cicatrizationem, pustulæ scabiosæ, & ulcerosæ, & interdum verrucosæ, per totum corpus spargebantur. Unde balnea, linimenta, aliaque, adhibere debuit; &, quia aliquando hujuscemodi morbus obedientiam minime præstare solet, præsertim ad dolores auferendos, idcirco, quum antedicta curatione iste morbus, cum suis doloribus, & pustulis, removeri non possit, tunc ad ulteriora remedia transeundum est; præsertim, ad unctiões, & cerota, in quibus ingreditur argentum vivum:* “ had vanquished the malignity of the ulcer

* Aphrodisiac. p. 452.

cer and pustules by consuming the ulcerated or pustulous place, and then bringing it to a digestion of benign matter, and to a purified state, with a purgation of much matter, yet after the part was cicatrized, scabby, ulcerous, and sometimes wart-like pustules, were spread all over the body: hence baths, liniments, and other remedies ought to be applied, and that because a disease of this kind is generally very obstinate: therefore, when this disease, with its pains and pustules cannot be removed by the aforesaid cure, recourse must be had to farther remedies, particularly to those unctions and cere-cloths in which crude mercury is mixed."

It appears from all these circumstances, that great caution is required whilst the extinction and extirpation of the contracted venereal contagion is attempted by corroding remedies locally applied to that part to which alone it is believed the whole contagion adheres. Botallus,† candidly acknowledges, that he had in his juvenile days, following the traces of others, applied acrid corroding remedies for the same purpose; but growing more adult, and cautious in the exercise of his art, he changed from that opinion; for he learned that these applications *illis duntaxat fuisse præsidio, qui recenter morbum contraxerant; ut totum, vel pene, quod infectum erat, illo extinguetur: sed hos vel etiam sanat integre simplex aquæ fons, vel repetita (si aliqualis sit durities) præcipitatio, in nullum discrimen ægrum inducentia*: "had been only as a defence to those who recently contracted the disease, so that the whole or almost all that which was infected, should be freed from it; or but a simple fomentation of water also cures those entirely, or a repeated sprinkling of precipitate (if there be any hardness) will bring the patient under no danger." But it was often

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* Aphrodisiac. p. 871.

said before, that recent venereal evils are of all others the safest carried away, if the place affected is so disposed, by fomentations, and milder corroding remedies, that the morbid virus, together with the corruption, may be discharged from the body. *Ab*

administratione enim eorum, quæ vehementer carnem subditam extinguunt, ulcus siccum manet octo dierum spatio, quod tantum abest, ut prodesse possit, ut obsit potius non leviter; nam, quantum fieri potest, colluvies a parte affecta e vestigio est eximenda; nec quia illud altius imprimitur, ob id plus juvat; non enim omne infectum enecat; sic, quod reliquum est, occlusa per causticum illi via, circumsitam ulceri carnem valentius inficit, &c. “ For by the administration of those re-

“ medies which powerfully dissolve that counter-
 “ feit flesh, a dried ulcer remains for the space
 “ of eight days, which is so far from being bene-
 “ ficial that its presence is rather of a greater hin-
 “ drance, for the filth is to be rooted out from
 “ the part affected as much as possible; nor be-
 “ cause it is more deeply impressed, for that still
 “ helps it, for it deadens not all that is infected
 “ so that what is left shut up by the application of
 “ the caustic, more vehemently infects the flesh
 “ situated around the ulcer in making way for it
 “ self,” &c.

It will not be incongruous to add something concerning venereal warts here, which often attack the genitals of both sexes, and beget no light molestations. It is known, that the internal superficies of the prepuce, and particularly the whole glans of the penis, are sometimes rendered rough and thick by such warts; for there is a numerous series of nervous sensible papillæ,* which lie from the corona of the glans unto the orifice of the urethra, on the superficies of the spongy fabrick and so cover the exterior ambit of the glans, that

* Aphrodisiac. in Præfatione.

these extreme nerves here, the proper instruments of pleasure and pain, being constrained under the more tender membrane of the glans, lie mutually incumbent to each other; if therefore the venereal virus pass'd through and gnawed this most slender external membrane of the glans, these papillæ become naked, and sometimes excite intolerable pain: if now the slender cellular fabrick is consumed by the venereal corruption, the papillæ grow out freed from that bond, and form into venereal warts, which sometimes deform the glans so as to render it like a hedge-hog, and almost obstruct all the motion of the prepuce: such warts are observed around the pudenda and anus in women.

And I have seen such venereal warts bred in the very channel (particularly near the end) of the urethra: these warts beget an almost intolerable itching in the nymph and vagina in women, who by scratching maké them degenerate into a malignant nature, and grow to a greater bulk; then they are usually called *cristæ*, *ficus*, *mariscæ*. *Botallus** saw *dum junior adhuc esset, Hispanum, glandem universam, atque præputium, magnis verrucis obsitam habentem, quæ ad tantam molem pervenerant, ut totam glandem obtegerent, præputium in summum extendentes, cum maximo dolore; quem secare fuit necessum per longitudinem, usque ad glandis radicem; sic enim omnia patebant, & dolor quievit: multæ autem verrucæ erant, quæ parvi digiti magnitudinem excederent*: “ in his
 “ juvenile days a Spaniard having the whole glans
 “ and prepuce besieged with venereal warts, which
 “ increased to such a magnitude, that they hid the
 “ whole glans, still enlarging the prepuce to the
 “ greatest degree, and with most intolerable pain, as
 “ there was a necessity for cutting it through the
 “ whole length even to the root of the glans; for
 “ thus all the inside became visible, and the pain
 T 2 “ ceased;

“ ceased ; but there were many warts which might
 “ have exceeded the magnitude of a man’s little
 “ finger.” *Henry Ab Heers* saw † warts bred in the
 under part of the glans by impure venery, and
 amongst these was one which exceeded the magni-
 tude of an acorn, and was stuck around with sixty-
 five little heads or infant warts.

Physicians know that these warts are always to
 be treated with great caution, particularly if they
 adhere to the skin, as it were, by a large base :
 when they adhere by a slender pendulant kind of a
 thread, they are safely carried away by a ligature
 around, or by cutting them ; but when they take
 birth from a venereal virus they are of a worse na-
 ture, and sometimes are with great difficulty to be
 eradicated, for they often bud into a greater num-
 ber.

They have sometimes been attempted to be cured
 in a cruel manner ; for the greater ones have been
 cut away by a razor or scissars, and the places they
 grew in were touched with aqua fortis, by the tact
 of which the smaller ones were corroded. *Botallus*
 used the following method ;* he split the prepuce
 that all the warts there might appear, then cured
 them by cutting or corrosives. Still he also recom-
 mended the use of such remedies for these as are
 usually to be applied for taming or eradicating a ve-
 nereal contagion.

I have often seen such warts to bud afresh, be-
 come more numerous, and of a more malignant na-
 ture ; in a short time after being cut, I have seen
 them in no manner to be forced to disappear, but
 still grow excessive big, and cover the glans after
 a salivation, until the prudent application of lapi-
 infernalis had made them all fall, and rendered the
 patient sound. A young man had many shanker

† *Observat. Medicar. libro unico, p. 84.*

* *In loco modo citato.*

in the glans and prepuce, which daily corroded the adjacent parts, and struck the patient with great dread, which urged him to have immediate recourse to salivation. The venereal shankers were soon enough healed, but presently a great number of warts sprang up in the glans of the penis, which were afterwards very safely healed by touching them with lapis infernalis.

But this I have learned from many similar observations, that the use of escharotic remedies is by far safer, or that of strong mercurial purges, or such-like, if the malignity of the venereal contagion had been enervated or entirely rooted out; and still more so, if the warts had been first fomented by an emollient decoction, before the more acrid remedies were applied: thus let the corrosive remedies be afterwards applied, that the scabs may soon fall off. I have joyfully seen other men, famous for curing the venereal disease, of the same opinion. So *William Fordyce* * relates a case of a man, who, being unhappily cured of a gonorrhea, had the corona of the glans every where beset with venereal shankers and warts; by drinking a pure decoction of *Sarsaparilla*, the shankers were indeed amended, but not entirely healed until six ounces of mercurial unction had, by repeated frictions, consumed them: still there remained some warts after the shankers were healed, but he abolished them by a common caustic; and he therefore recommends the use of this remedy when the warts continue rebellious, after the contagion is routed by antivenereal medicines. The use of lapis infernalis has this conveniency in it, that it can be applied to a determined place, without flowing to any neighbouring part which ought not to be corroded; for it also quickly destroys the part it touches with scarce any pain. An emollient fomentation soon provokes the mortified part to a suppuration,

T 3

and

* *Medic. Observat. and Inquiries*, Vol. I. p. 155.

and if any particles of the warts remain, they are taken away by a fresh touch of the lapis infernalis.

Still there is need of great caution whilst such warts of the penis and prepuce are to be carried away by cutting, bringing on a scab, or by ligaments about them; for if they begin to itch, grow painful, red or livid, which is far worse; if the margins, particularly of the greater, should be inflamed. I always abstain from the use of more acrid remedies, and am always careful that they should be only perpetually cherished by an emollient decoction, whilst a strong mercurial purge was at the same time given: *turbith mineral* was particularly profitable in this case, as I have already remarked in Sect. 1372, where the expulsion of the worms was treated of: thus have I seen the warts to have fallen in a few days without the application of ligatures or corroding remedies.

The famous Alexander Monro, * in his treatise of fortunate cures, which sometimes happen beyond hope, recites a case which was happily crowned with success by the application of emollient remedies to the diseases in the genitals, which was much acerbated by another method of cure. A small wart arose on the extreme margin of the prepuce of a young man, who cut it away with a razor; not long after, the interior superficies of the prepuce began to be attacked by many more such excrescences of a pale red, which hung by a little stalk; when the prepuce was drawn up, some greater tufts were seen on the glans. In vain were mercurial unctions, astringents, escharotics, and many other remedies tried to banish them, and the patient even pass'd salivation with no better effect.

The celebrated *Monro* tried only one of these warts by tying a wax thread tightly round the neck

* Medical Essays and Observat. Vol. V. part 2, p. 495, 496.

of it, which gave the patient great pain, but that soon vanished; then, in the space of two days, the girded wart fell, and the place it occupied appeared smooth and sound. A young surgeon, who was present at this operation, was ordered to tie up all the rest in the same manner: he tried the ligature upon another wart the day following, but as the surgeon was timorous though the patient was obedient, he tied not the thread hard enough so as to intercept all communication between the live vessels and the wart: the patient suffered great pain during that day, and the day following a great inflammation arose there, which required a copious bleeding: fomentations, and pultices composed of emollient remedies, were jointly applied to the place affected, by which the inflammation was diminished within the space of two days, and all these excrescences were remarkably diminished: but when the inflammation totally subsided, all these warts became rough: then, by the application of emollient remedies continually, during the space of eight days, the warts all vanished, so that not a trace of any one of them remained by which the places they emerged from could be distinguished from the rest of the sound skin. The celebrated *Monro* would have the happiness of this cure attributed to that new-born inflammation, rather than to the application of the emollient remedies: but *Boerhaave* before * endeavoured to inculcate the use of emollients to all others of the faculty: *Si imprudens rerum Chirurgus nudam tenui sua membranula superficiem vivam papillosam glandis acribus irritaverit, contigit sæpe, ut totum penis corpus dirissimum in modum inflammaretur, turgesceret, priapismo, exquisitissimos dolores pariente, laboraret. Unde & ad hoc mali genus emollientia, laxantia, humectantia, anodyna, extrorsum allicientia, securissima præsidia sunt; quæ vel sero applicare cogaris, ubi tur-*

* Aphrodisiac. in Prefatione.

bas, per rodentia excitatas, compefcere debebis. Laſte, & althæa, præſtiti hic, quæ argentum vivum nequiverat; unguento althææ, aut nutrito, perfecì, quod Aegyptiaca, & mercurialibus, negabatur: “ If a ſurgeon, through ignorance or imprudence in theſe matters, ſhould have irritated the nervous ſuperficies of the glans, diveſted of its ſlender little membrane by acrid remedies, it often happens, that the whole body of the penis becomes inflamed in a moſt ſhocking manner, then ſwells and labours with a priapiſm, productive of very exquisite pains; from whence emollient, laxative, diluting, anodyne, and outward-drawing remedies, are a moſt ſecure defence againſt this kind of evil; which you ought thus to reſreſs, or you will be forced to a late application of thoſe remedies, where this train of evils had been roused up by corroding remedies. I have ſucceeded in ſuch a caſe by uſing milk and althæa, when crude mercury could avail nothing; or I have by the ointment of althæa, performed that which reſiſted the virtue of mercurials.”

I have afterwards ſeen that a celebrated phyſician of the faculty of Paris * had with ſucceſs applied corroſive ſublimate diſſolved in ſpirit of wine, diluted in a quadruple quantity of warm water; but twenty grains of this ſublimate were diſſolved in two pounds of the ſpirits of wine, ſo that every pound of this mixture contained eight pounds of water and two grains of the corroſive ſublimate, which certainly could not be hurtful, not even in the exertion of its greateſt irritating force, when applied to venereal warts. The anus and perineum, being the places beſet with theſe warts, were twice a day waſhed with this remedy.

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* M. Le Begue de Preſle, Memoire pour ſervir a l'hiſtoire de l'uſage interne du mercure ſublimé corroſif, p. 215.

The warts were of a pale colour, a soft consistency, and equaled the top of a man's little finger in thickness. The utility of these lotions manifestly appeared in a few days after, for in ten days time they all disappeared, but perished not; for some yellow spots remained in those places of the skin only which were occupied by the greater warts: these spots were altogether like those dispersed all over the superficies of the body, and remaining in the skin after venereal pustules are healed. This corrosive sublimate was also internally used, to such a quantity that eight parts of a grain of it should be swallowed in the space of five nights; but though all the remaining symptoms of the venereal disease had been chased away by the sole internal use of this remedy, the warts still obstinately remained until also extirpated by an external lotion of the same remedy, diluted in a quadruple quantity of warm water.

But it may be certainly concluded, that the cure of these venereal warts was owing to that external washing; for two warts were bred in the right labium of a pudenda, which the female patient had never touched by washing them, for she was only solicitous about some others which were in the perineum and anus; so that these disappeared, but the two in the pudenda tenaciously kept their places, until she was advised to wash them also by the same remedy, by which they in a few days vanished.

S E C T. MCCCCLXIV.

BUT those internal remedies I have prescribed in Sect. 1458, are to be commonly used.

For the contagion adheres in the place affected, which many have attempted to root out by acrid corroding remedies before it should infect the whole body: the more prudent have fomented the place affected by the most emollient fomentations; then endeavoured to excite a suppuration there by the mildest irritating remedies, that the venereal virus might be expelled the same way it entered: so, as it was said in the cure of the gonorrhea, let us endeavour to promote the flux through the urethra, that the contagion may be also driven out, whilst all possible care should at the same time be applied, that it be vehemently excluded from the body, or rendered inactive, so as that that part of the contagion which is absorbed, and flows through the vessels with the humours, may not be deposited in other places of the body, and produce new evils.

But how and by what remedies that can be obtained, has been said in Sect. 1458, where the cure of the gonorrhea was treated of.

S E C T. MCCCCLXV.

TH E venereal fluor in women is cured by the same remedies (prescribed in Sect. 1458.)

The cure of a gonorrhea in women was before mentioned in Sect. 1447, and how that differs from a gonorrhea in men; together with the manner of distinguishing that venereal fluor from the fluor albus in women. It was then remarked, that the gonorrhea in women can be divided into different kinds, according to the different places it occupies in the female sinus; from whence a greater or less difficulty of a cure also follows: but as all that regards the diagnostics and prognostics were there explained, it now remains that something be said concerning the cure of it.

The general directions to be here observed are the very same which were recommended for the cure of the virile gonorrhea, namely, that all the contagion contracted by impure venery, and infecting the parts in women, may be purged out with this fluor: hence all astringent remedies are to be sedulously abstained from, for the fluor is rather to be augmented that the contagion may flow out with it, lest that part of it which had been absorbed may attack the rest of the body.

All the prescriptions therefore recommended in Sect. 1458, also conduce to a cure of a female gonorrhea; yet it is to be known, that women cannot bear such strong purgations, nor so frequently repeated, as men indeed can, especially if they are of a lax habit of body, and a nervous texture, capable of being easily irritated. *Tamarinds, manna, sena leaves, cassia, &c.* are sufficient in such cases for dissolving

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solving the humours, that the contracted venereal virus may not easily adhere in them. Mercurial purges are but seldom used here, and then but of the milder kind and in less dose, stirred up in these quantities.

It was said in treating of the virile gonorrhea, that much exercise was very injurious, and that it sometimes rendered that evil incurable; yet motion is not offensive to the female sex but rather profitable, as it provokes a more happy discharge of the fluor through the vagina: the structure of the genital parts in women teaches the reason of this.

S E C T. MCCCCLXVI.

BUT particularly by powerful detergent fomentations and mercurials.

The evil in a virile gonorrhea adheres in the urethra, where the local application of remedies is more difficult, and can only be applied in a less quantity by injections or the bougies; besides, there is need of great caution in preserving the interior part of the urethra from being irritated by the remedies applied there, particularly if of a more acrid kind. There is less to be feared in the female vagina, if that discharges a quantity of venereal fluor by distilling ulcers; for sponges, wetted with detergent remedies, can be easily applied and contained in the vagina, though these may be sufficiently active: from whence such a detergent decoction, by which the pudenda is to be often washed in the day, is approved of in the *Materia Medica*, particularly when the evil adheres in the external parts and the nymphæ of the pudenda, or even if venereal ulcers were placed higher in the vagina, so that they can be moistened and cleaned with a sponge full of this fomen-

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mentation. When a more prudent use of mercurials is required, particularly of the more acrid, if the filthy ulcers of the vagina should want them; there is a prescription held in account which consists of thirty grains of corrosive sublimate, are diluted in one hundred and sixty parts of water distilled from rue, then sixty-four parts of *mel rosarum* are to be added; and so the gnawing force of the corrosive sublimate is deadened by this mixture, so that it can easily be endured, while it sufficiently cleans the sordid ulcers. From the use of these the venereal fluor at first usually augments, then gradually decreases, and the ulcers thus purified are healed. More or less of the actuating fomentations is to be applied according to the various state of the ulcers, and the changed nature of the venereal fluor; concerning which, see what has been said in Sect. 1458, of the cure of the virile gonorrhea.

All the remedies there mentioned now take place, particularly when the seat of the venereal fluor is in the labia or nymphæ of the female pudenda, or placed in the cavity of the vagina: it ought to be remembered that, in Sect. 1447, it was said, that a difficulty of urine does not always accompany *the first species of a female gonorrhea*, as it doth that in men.

But it was also said, that the orifice of the urethra in women is placed like a wrinkled wart between the nymphæ, under the clitoris, and it is pierced by many small ducts, from which a viscid matter can be pressed: these mucose furrows are sometimes infected by impure venery, either by themselves or together with the vagina. When that glandular tuberculum (in whose middle the orifice of the urethra is opened) swells, grows painful, and distils venereal corruption, either spontaneously or when press'd, then that is said to be *the second species of a female gonorrhea*: this was by *Santorinus* called the depressor muscle of the urethra,

thra, which is affected by an erection, and makes the glandular body stand out farther; from whence a difficulty of urine is bred; for they feel a rigid molestation and a tension whilst the urine is emitted, and they think that something falls from the vulva, or at least labours for an exit; but when this glandular body is eaten by a venereal ulcer, then a scalding pain is roused up by the flowing urine.

It plainly appears, that those more acrid remedies which are easily borne in the cavity of the vulva, and on the exterior parts of the pudenda in women, should not be applied to that place, if it had been affected by a venereal contagion; for these remedies augment the troublesome erection by their stimulating power, so that the application of them is dangerous, lest the orifice of the urethra should be oppressed by the ambient tumour, and thereby cause a dangerous suppression of urine: the most kind remedies are therefore required in such a case, that the infecting matter may be drawn outwards, and that the troublesome tension of the parts may be relaxed: a decoction made of *mallows leaves*, *althea*, and *longwort* in water and milk, or, if the pain is urgent and attended with a great tension, a decoction of *milk whey*, and pounded *linseed* may be used; to which *garden poppy leaves*, or *henbane*, may be added. Let fomentations and pultices, made of these, be perpetually applied until the tension of the parts begins to subside, and then the use of cleansing milder remedies, such as *honey*, *aloes*, and such-like, will conduce to a cure.

But as the urethra in women may be affected, though that seldom happens, there would then a *third species of a gonorrhea* be produced in them; for the channel of the female urethra is of the same structure as that in men, but much shorter; from hence all the directions given for curing a virile gonorrhea, will equally conduce to a cure here. If
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the disease be neglected, there sometimes follows a filthy effusion of urine from the corroded urethra into the vagina, which sometimes remains incurable.

Besides, there are great glands, equal in bigness to large peas, commonly placed at either side of the lower part of the female pudenda : these glands pour out a viscid and copious humour through their ducts, which are fully conspicuous ; (see what has been said of these in Sect. 1447 ;) but as what is injected by a man at the time of coition into the female sinus, when he labours under a gonorrhea, spontaneously descends towards the inferior part of the vagina, where the ducts of these glands open ; there is an evident reason why these can be easily infected by a venereal virus, and then that is said to be *a fourth species of a female gonorrhea*.

Unless these infected and swelling glands had poured out the contained virus freely through their ducts into the vagina, the matter will be retained and will infect the whole body ; it will also degenerate into the most malignant ulcers, by which all the adjacent parts will be corroded, not only these neighbouring parts, but the intestinum rectum also, and then the fœces alvinæ certainly go out of vulva, and form a filthy spectacle. All that was said of the *Cowperian glands*, affected in like manner in a virile gonorrhea, takes place, and a similar cure is required here. Let the softest pultices, made of *the coats of onions roasted under the ashes, and gum ammoniac* well dissolved in the yolk of an egg, be perpetually applied to these swelling glands, that the virulent matter may be drawn outwards, and not produce the worst of evils by verging inwards.

S E C T. MCCCCLXVII.

BUT when pustules are every where diffused, and accompanied with pains of the arteries, nocturnal inquietude, tortures of the bones, arising from many endured gonorrheas; all these manifest the present existence of the venereal disease, and require a mercurial salivation.

We have hitherto considered those evils which are bred from a contracted venereal contagion in the body, according to the different parts of it to which it was applied, or to the circulating humours with which it was first mixed, and then being deposited in one or other of these parts produced various diseases; hence the diversity of these evils occasioned different names to be given them, and the diagnostics, prognostics, and the cure of every one of them, were described; in all which a great variety occurs, and that is on account of the different parts to which the contagion had been brought, though it is still the same: now the method to be taken for curing the venereal disease, when strictly confirmed, is to be treated of.

Certainly *Fernelius* * has excellently given the following opinion concerning the venereal disease: *Quum ex dubiis signis de Lue ambigitur, ejus origo est altius investiganda, a qua parte initium habuerit. Etenim, quoniam non nisi attactu contrahi potest, necesse est, labes aliqua, in ea primum parte comparuerit, per quam insertum est virus. Hæc enim prima se profert, in partibus obscænis, si concubitu, in summa cute, si accubitu, contracta est; in nutricum mammis, si in-*
quinatus

* *Aphrodisiac. p. 614.*

quinatus erat infans; in infantis ore, & faucibus, si nutrix infecta. Emergunt autem in obscænis partibus pustulæ, ulcera maligna. virulenta Gonorrhæa, inguinum Bubones. Sed hæc, nisi ultius introsubeant, nondum sunt Lues Venerea, sed rudimentum & velut character ejus impendentis: “When there is a doubt concerning the uncertain signs of the venereal disease, that part from whence it had its origin is to be more closely examined, and from what part it had its beginning; and also, as it cannot be contracted but by the tact, it is necessary that some corruption had first appeared in that part to which the virus was grafted; for this corruption first shews itself in the obscene parts, if it was contracted deeply in the skin by copulation or lying down: it is contracted by the breasts of a nurse if the infant is defiled, and by the infant’s mouth and inward parts of it, if the nurse is infected; for pustules, malignant ulcers, and a virulent gonorrhæa, appear in the obscene parts; together with buboes in the groin; but unless these advance still deeper, they cannot yet be called the venereal disease, but a beginning, or as it were, a mark of its threatening power.”

So one or two venereal pustules, bred in the body or in the pudenda, are not by physicians called the venereal Lues, though even a venereal contagion, which could have infected the whole body, attends them; so a buboe bred in the groin is not called a Lues, though the fomes of the Lues, which is greatly to be feared, may adhere there. The same observations concerning the rest of those evils hitherto enumerated to have been bred from a venereal contagion, hold to the like certainty; for every one of these is usually considered as a local evil, and is to be separately cured; but, when more of these concur together in the body, or fall into a crude state again, after being mitigated in the beginning, or entirely ceased, it may be justly suspected, that the

whole mass of humours is infected, and then an efficacious cure is to be applied, that the whole virus may be eradicated: this is particularly required, if nocturnal pains of the ligaments of the joints excruciate the wretched patients. It was before said, that the contagion was greatly to be dreaded if it had penetrated the bones; for they are gradually corroded by a slow caries, and with intolerable pain to the patient; and the contagion, adhering in the bones, can but with great difficulty be extricated from thence: from hence the return of the disease so often follows, even after the most troublesome and long protracted cures. The physicians, to whom the cure of the venereal disease is most familiar, know that such misfortunes happen; particularly if the patients, recovering from this disease, immediately indulge their appetites, whilst the body, still exhausted by the pains and the severe cure it has endured, is quickly filled with the rich products of Ceres and Bacchus, with false hopes of recovering its lost strength the sooner. This certainly proves vexatious and tiresome to such as undertake the cure of such patients, whilst these drudges of venery, scarce freed by a cure, and forgetful of their evils, return to their usual and most depraved manner of living, are infected afresh, and cry out to have been badly cured. I have seen such a man, who, the same day his salivation was ended, crept out from his confinement, and had connections with a filthy prostitute, from whom he returned punished with a most virulent gonorrhea: he indeed confessed his crime, because nobody would believe him if he had denied it.

It is therefore much worth our care to consider attentively what the faculty have tried in vanquishing this foul venereal disease.

It was proved by many observations, mentioned in Sect. 1440, that this was a new disease in Europe, which the faculty beheld with just astonishment, as
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they had not treated any other similar to it before : many therefore amongst these entirely declined from preparing medicines for the patients affected with the Lues ; some others only treated it in a cursory manner, whilst no other method of ministering a cure was yet known ; thus, being wearied by the troubles, and terrified at the raging ferocity of the incorrigible evil, they abandoned the patients to their own fate.

But as the number of the infected increased, they could not longer deny their assistance to the diseased ; and they endeavoured to cure this new disease with the like remedies they usually applied to other diseases : they endeavoured to dissolve and render the morbid matter moveable, by decoctions made of herbs and spices plentifully drank, and by syrups composed of a silly mixture of harmless simples, which they call *magistrales* ; then they gave strong purges, to expel that morbid matter already loosened ; that done, they returned again to that decoction and syrups, which they in like manner followed by giving cathartic remedies ; yet they persisted in easing the fatigue of a cure in that manner by various prescriptions, and adapted those to four varieties of constitutions : thus they at least were willing to consult their own fame, whilst the obstinate disease still yielded not, so as to convince the sick that they had applied all the power of known art, and had left nothing internally which could be amended ; for they, for the most part, began their cures by bleeding ; after which they freed the first passages from all filth by glysters and milder purges, which were usually called *eccoprotica*, that an entrance might be made for the rest of those medicines which were believed to be capable of chasing away the Lues : this may here and there be seen amongst those authors who wrote in the time of the first birth of this disease, and repeated such remedies to a degree sufficient to make a man

sick : this was called a cure by changeable and purging remedies. This method profiting but very little, some others, believed to be more efficacious, were thought of.

As the venereal disease fouled and defiled the skin in the beginning with pustules and ulcers, and as the physicians, who lived in the first days of this disease, knew that mercurial ointments were successfully applied for curing of ringworms, tetters, St. Antony's fire, and the itch, they from an analogy tempted to cure the venereal disease by the same unctions prepared with crude mercury. It is well known, that the Greek physicians avoided the use of crude mercury, as if it were an injurious and deadly poison.*

But the Arabians first ventured the application of mercury, as well for killing of cutaneous infections, as the itch, St. Antony's fire, and other irruptions on the skin ; that was called *unguentum Saracenicum*, which was formerly famous because it contained *staphys Agrium*, a certain antidote for cutaneous infections ; for if these seeds when pounded are scattered through the hair of the head, they kill the vermin there ; but as that unction contained about a ninth part of mercury, it ought to have laid many under a salivation, though the patients anointed themselves but once a week with it.

The celebrated Astruc† says, that *Theodoricus*, who was a famous physician about the year 1280, and *Guido de Cauliaco*, in 1363, had used this Saracenic unction for the destruction of vermin, and had seen a salivation arise from it, for he first said, *hoc linimentum educere superfluiditates per os, balneando (bavando), & per subascellas resudando. Additque Guido : Argentum vivum nocere membris principalibus, & den-*

* Vide de his Astruc de Morbis Venereis Lib. II. Cap. VII. p. 118, & seq.

† Ibidem, p. 119.

dentibus, atque gingivis: “that this liniment takes away superfluities through the mouth, by rubbing, spitting, and sweating: and Guido adds, that crude mercury injures the principal members, the teeth and gums.” It is believed, that these two authors were the first who observed a salivation to have proceeded from the external application of mercury; but it is to be known, that these two authors lived a long time before the venereal disease was known.

But as crude mercury was by many others held as a most dangerous remedy, and though they saw that the use of it was profitable in this disease, the more prudent began to use unctions, which only contained a small share of mercury, and that was gradually increased. Certainly it was an excellent and laudable undertaking, to proceed by slow degrees in the use of a remedy not yet fully examined, that they might safely experience the efficacy of a new remedy for this disease.

But empty quacks, who so often divert themselves with the human skin, and that indeed with impunity, and who, allured by the hope of gain, bestow unutterable praises on their secret remedies, which they pretend to be unknown by all mankind; boast of an acquisition of these preparations by long study, labour, and great expence. They easily persuade the common people, that the renown of such a secret remedy is spread both far and near, and that they alone can, by the power of art, work away that injury which is almost by all people believed to lurk in crude mercury, so that the venereal disease may be safely and speedily cured, though of never so long standing. Whilst audacious men mixed a great quantity of mercury in their ointments, without any precaution, and copiously, and for a long time rubbed many patients with them, so great a salivation and tumour arose about the jaws that they were suddenly suffo-
 U 3 cated,

cated, or if they escaped that danger, they were so exhausted by the salivation that they perished: there are but few men who arise from a salivation with proper strength for the remainder of life, after such and so many evils. *Macilenti, luridi, squallidi, edentati, balbutientes, ore obligato capistrati, post miserias diuturnas, & miserrimas, lente convalescebant*: “ They
 “ became lean, pale, squallid, toothless, stammer-
 “ ing, and tongue-tied, and after all this train of
 “ long-endured hardships and miseries, they but
 “ slowly amended.”†

These calamities so terrified the greater part of mankind, that almost every body shunned the use of crude mercury, as if it had been a mad dog or a serpent, until some more skilful physicians had taught a far safer method by which the mercury could be tried, if applied with due caution.

Nicholas Massa, who excellently wrote concerning the venereal disease, and acquired great reputation by curing it, applied fumigations and mercurial unctions, and prosperously too, when a cure had not succeeded a trial of milder remedies. *Tametsi hæc duo remediorum genera a quibusdam Medicis, qui non ex omni parte bene discurrunt, neque experimentis discursum confirmant, sed, ab apparentibus nominibus decepti, remedia reprobant, accusantur, & tanquam perniciosissima increpantur, illi tamen nullum auxilium adferunt talibus, præter quædam millies exhibita, & nihil proficientia, sicque ægros in deterius, & in perniciem, procedere sinunt. Sed audiant, & sciant, quod in magnis morbis, non obedientibus fortibus medicinis, ad fortiores, & ultimas, medicinas confugere, si credimus Hippocrati, oporteat*: * “ These two kinds of remedies were nevertheless despised by some certain
 “ physicians, who discourse not well of every part,
 “ nor

† Vide de his Astruc de Morbis Venereis, Lib. II, Cap. VII. p. 121.

* Aphrodisiac. p. 90.

nor confirm their discourses with experiment ; but they, still deceived by apparent names, condemn these remedies, and condemn them as the most pernicious of all others ; yet they bring no additional aid, besides that which was a thousand times unprofitably exhibited to such remedies ; and thus they suffer the sick to proceed in illness and ruin : but let them hear and know, that it behoves them to have recourse to the yet stronger and more powerful medicines in cases of violent diseases, disobedient to strong ones, if we believe Hippocrates."

From hence it appears, that he esteemed mercury as a most efficacious remedy ; but he also acknowledges, that prudent caution is required in the administration of it : but as there was usually less fear in applying this remedy to the external superficies of the body, it seems that it was from hence the use of applying crude mercury, mixed with ointments and plasters had prevailed ; and thus the remedy could be commodiously applied to local evils bred from a venereal disease, such as buboes, ulcers, tumours of the bones, &c. the same conveniency was obtained whilst cinnabar is dissolved into vapours by sublimating of mercury and sulphur mixed together, and sprinkling them on a fire, so that the vapour might every where surround the superficies of the body : for it was customary to place the patients in a wooden box in a room thus heated, so that the head might only stick out and be exposed to that fumigation, whose vapour could thus be determined to any certain part of the body, which was thought to be most chiefly affected. There are various methods of applying this fumigation of cinnabar, described in the sixth book of the Gallic disease, wrote by *Alexander Trojanus Petronus*.* He says the quantity of cinnabar for every fumigation should not exceed

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* Aphrodisiac, p. 1300, & seq.

an ounce, nor be less than half an ounce; he also remarks, that this fumigation was applied once in the twenty-four hours by many, and by some twice, but in small quantities; also that many others interposed the fumigations by a longer interval of time; but he believes the unctions or frictions by mercury to be far safer, and at length concludes, *Suffumigia nisi morbo jam inveterato, & ferme jam desperata salute, viribus tamen constantibus, nunquam administrari debere*: “ Unless it is in an inveterate
 “ disease, and in a case of health already despaired
 “ of, but yet attended with strength, this remedy
 “ should never be administered.”

For it is certain, that mercury divided into very small parts, and agitated by the flaming cinabar, so that the incense be every where applied to the hot and sweating skin, will easily be received by the cutaneous absorbent vessels, and be mixed with the blood; thus the effect of the crude mercury will suddenly follow in the body, though but a small share of cinnebar has been applied.

This we learn from the following case: † An excessive tall woman, of sixty-three years of age, laboured for the entire space of four years under the venereal disease; her pulse intermitted at every third and fourth pulsation; the pudenda was beset with almost every kind of venereal excrescence, so that she could neither sit nor walk without great pain; a head-ach and other nocturnal pains so oppressed her, that she could not rest at night: the continuance of the disease, together with repeated bleedings and the application of powerful purges, had so wasted away her body, that the miserable wretch became like a skeleton.

As the disease was observed to be desperate, and the patient anxiously desirous of aid, trial was made
 what

† Medical Essays and Observat. Tom. IV. Art. VIII. p. 41.

what effect the fumigation of cinnabar would be of, but still in a prudent manner.

The next morning, at nine o'clock, thirty grains of this cinnabar and mercury were burned so as that the patient could receive the smoke into her mouth and nostrils; she easily bore and greedily suck'd or snuffed in the fume; from whence a light cough proceeded: her body being well covered, she began to sweat, and spit so that at ten o'clock she had already discharged a pound and a half of saliva; the cough still continued, and a stench, which usually attends the beginning of a salivation, filled the whole room; her pulse was fuller and quicker, but also very irregular and intermitting: at three o'clock in the afternoon, there was as great a stench in the room, with three or pounds of saliva, as if many more had been for twenty-four hours in a salivation: then the power of the mercury began to rush downwards, and she stooped three times with great pain and a rumbling in her bowels; her pulse beat quick, was depressed, trembling and intermitting; ten grains of laudanum, diluted in an astringent cordial julap, were immediately given her, and she was put to bed still dress'd, then covered up with the bed-cloaths that she might sweat, which she copiously did; at nine o'clock that evening her pulse was still quick, full, strong, and intermitting only at every twenty-first or twenty-second beat. When undressed that night, she exposed herself to the cold air, and the pains and rumbling of her bowels, together with the flux by stool, returned, but all that ceased by the repeated use of the laudanum, and the sweat returned.

The day following the pains and rumbling of the bowels returned at every tenth or twelfth hour, with anxiety and intermission of the pulse; but as soon as the liquid laudanum was given, all ceased again and the sweat returned.

The

The morning following, being the third day, the opiate was omitted, and she stooled twenty times, still attended with the same symptoms ; which again ceased as soon as the opiate was given ; and the sweat returned.

The fourth day passed as the second ; for the stench, that companion of a mercurial salivation, still remained.

She took a purge at seven o'clock the next morning ; as that had not moved her until the hour of nine, a stimulating draught was given her to increase the force of the purge ; the patient imprudently took that, though she already had three motions by stool ; from that followed so violent a hypercatharsis that she, at six o'clock in the evening, seemed to be dead ; the opiate being again given, all that immediately ceased, and she passed the whole night quietly, wetted all over with sweat.

The pains of the jaws, and the other symptoms of an inveterate venereal disease, were entirely carried away the day following, which seemed wonderful : she then walked seven English miles, and was carried two miles farther in a coach, through both wet and cold weather.

The flux by stool had often returned during six weeks ; she afterwards took some pills, composed of *sulphur of antimony and calomel*, then drank a decoction of the woods after them ; a copious sweat followed the use of these whilst the weather was warm, and all the symptoms of the venereal disease vanished : but as the tempestuous autumnal coldness returned, a constant diarrhoea also returned ; which at length entirely ceased in February, being then the tenth month after the administration of the fumigation of cinnabar : then her legs began to swell, two purges being then given, that evil was amended, but returned again, and was neglected ; the tumour still increased so that she withered away, and towards the
end

end of April, being the thirteenth month after the fumigation, she expired.

It appears from this singular case, that a few grains of crude mercury, reduced into the most slender vapour by the force of fire, will quickly excite both a salivation and sweat, when suck'd in at the mouth and nostrils, and indeed in such a manner, that in three hours time the whole room should be already filled with a stench from the new-rising salivation. It may be justly concluded from hence, that a small quantity of mercury is also sufficient for healing a confirmed Lues of some years standing, so that no doubt of the efficacy of the fumigation of cinnabar remains: but whether this is a safe method of curing the venereal disease, or not, is another question. In this woman the force of the crude mercury suddenly rushed down by stool, and excited a dangerous hypercatharsis, with vehement rumblings of the bowels and copious sweats, which indeed ceased when the opiate was given, but then they often again returned and remained for long time; then, when these entirely ceased, a dropsical tumour of the legs ensued, the whole body wasted away, and death put an end to the whole train of evils.

Besides, whilst cinnabar is burnt, a sulphurous vapour exhales from it, which brings on sudden death, if a greater quantity than needful should be sucked in; or if that danger should be escaped, it leaves an incurable asthma, and often gives birth to a consumption of the lungs. If what has been a little before said, may be justly considered, not less than half an ounce, nor more than an ounce, of the cinnabar should be applied for every one of these fumigations, which were daily and sometimes twice a day repeated. It is easily understood what ruin and slaughter formerly happened, whilst some quacks, the servants of stews and bagnios, who had a long time served in these wrestling places of Venus, and

some others of the baser sort of the common people, so audaciously undertook this dangerous cure.

It seems sufficiently consistent that the fumigation of the cinnabar had powerfully acted whilst attracted by the mouth and nostrils ; but with what danger of a suffocation was that done, especially if a greater quantity of cinnabar had been added ? *Antonius Musa Brasavolus* * gives the following opinion of this matter : *Scitote, nonnullos Medicos istos suffumigasse ; capite etiam a conopeo non exerto ; quod periculosissimum est. Nam quempiam vidi, qui ex fumo, caput petente, in apoplexiam incidit ; & statim mortuus in terram corruit : idcirco laudo, & jubeo, ut, exerta capite, suffumigentur, imo papilio circa collum stringatur, tum ne fumus exeat, tum ne nares feriat* : “ Be it known, “ that some of these physicians had used fumiga- “ tions, and had not also caused the patient’s head “ to be thrust through the covering, which omis- “ sion is very dangerous ; for I have seen a cer- “ tain person who, by the puffing of smoak against “ the head, fell into an apoplexy and presently “ lay dead on the ground : therefore I both recom- “ mend and order, that the head should be thrust “ out when all the other parts are fumigated ; “ and that even a pavilion or veil should be fastened “ about the neck, so as that the smoak may not go “ out nor strike into the nostrils.” But though he judged this man to have died of an apoplexy, it is far more likely that he was suffocated, for there always passes some time between an apoplexy and death, nor could that present disease be distinguished if that had not been so.

Though *Nicholas Massa* † had greatly extolled the efficacy of these fumigations for the most severe venereal disease, yet he dissembles not the most fatal evils to be dreaded from them ; for thus he advises those who undertake a cure by this method, *quod iste modus*

* *Aphrodisiac.* p. 687.

† *Ibidem,* p. 100, 101.

modus non sit sine timore nocuenti membrorum principalium; immo sæpe recidunt, & ad malas ægritudines complicatas cum ista deveniunt; quæ sunt, asthma, tussis, hydropisis, & marasmus; quare non est administrandus, nisi in inveteratis, & in virtute forti, cum ægritudine mala: “that this method is not without
 “some dread attending it, such as a damage of the
 “principal members, which often fall into compli-
 “cated disorders, which, together with those which
 “arise, are the asthma, cough, dropfy, and a con-
 “sumption; wherefore the method is not to be ad-
 “ministered except in inveterate cases, and where
 “powerful help is required for the malignity of the
 “disease.” So that he had observed such a power-
 ful dissolvent force from these two fumigations,
 that those who were oftner rubbed with mercurial
 unctions without having a salivation, had, after these
 fumigations, not only every kind of imposthume
 dissolved in them, but a nervous softness also fol-
 lowed by a palsy, of which he made no great ac-
 count, as the patients were also recovered from that
 in some months after being cured of the venereal
 disease.

But he excellently pronounces the following opi-
 nion: *Scias etiam, quod omnes virtutes unktionis pos-
 sumus suffumigio attribuire, præmissa securitate, ut
 supra; & ratio est nota, cum basis sit virtus argenti
 vivi operans; quapropter dico, quod digerit, & præ-
 parat ad omnia, sicut unctiones:* “You may also
 “know, that we can attribute all the virtues of
 “the mercurial unktion, with security, to the fu-
 “migation, as before said; and the reason is
 “known, as its basis is the operating virtue of the
 “crude mercury, wherefore, I say, that it digests
 “and prepares every thing necessary as the unc-
 “tions do.”

From these and many more observations, which we
 read, dispersed amongst the authors, concerning the
 utility of fumigations for curing the venereal disease,
 it

it plainly appears, that crude mercury, divided into the most minute globular particles, and then moved by fire in form of a vapour, will produce all the efficacy when received by the cutaneous vessels; for unless such remedies as contain mercury in themselves be added to these fumigations, it is observed that they are of no effect in curing the venereal disease, though the most selected aromatics of the most fragrant resins, and many more such-like or others be applied; for those physicians, who universally detest all remedies prepared with crude mercury were rather willing to try some other methods, imagining they could expel the virus from the naked bursting or porous skin by sweat, brought on by a hot aromatic vapour or fume; and some of these first used the milder and less offensive fumigations of cinnabar, before the more efficacious and less safe also were brought in to subdue the obstinacy of the venereal disease.

So *Fallopious* * described two kinds of fumigations namely, fumigations *ex materia benigna*, “ of benign matter,” which contained no mercury, and but mere aromatics only, and fumigations *maligna*, “ malignant,” where *sandaracha Græcorum* and opiment were added to the artificial cinnabar; certainly these remedies are justly suspected of danger; for it appears, that they believed the virus of the venereal disease could not be destroyed but by another poison; for so he has it, *Ut redigamus rem ad summam, sciatis, quod tota res consistat in Hydrargyro vel in alia materia consimilis naturæ cum eo, ut est Arsenicum, Sandaracha, Cinnabaris artificialis, & Præcipitatum; condiuntur ista cum aromatibus, ut viscera roborentur*: “ That we may bring this matter to a conclusion, you may know, that the whole virtue consists in the quicksilver, or in some other matter of the like nature with it, such as arsenic

“ sanda

* Aphrodisiac p. 806, 808, 809.

“fandaracha, artificial cinnabar, and precipitate;
 “these, with aromatics, fortify and preserve the
 “bowels from corruption.” But as they knew that
 an efficacy, from which a cure of the venereal
 disease might be hoped, consisted in the crude mer-
 cury, it would be a rash undertaking to augment the
 danger by an addition of arsenic, and expose the
 miserable patients to the most malignant evils, which
 even usually follow the external application of
 arsenic.

It seems credible, that *Fallopious* * had never used
 these malignant perfumes, for he put the following
 title to the seventy-second chapter of his book : *De*
modo suffumigandi universum corpus materia valida,
sed non venenosa : “Of the manner of fumigating the
 “whole body by a powerful but not a poisonous
 “remedy.” Then he briefly enumerates the evils,
 resulting from these fumigations, in the following
 chapter, thus ; *Succedunt in suffitibus symptomata quæ-*
dam, aliquando alvi solutio, aliquando corruptio palati,
aliquando labefactatio omnium dentium ; quæ solent suc-
cedere etiam in inunctione ex Hydrargyro : “Some
 “certain symptoms follow the use of these perfumes,
 “such as the opening of the belly, sometimes a
 “corruption of the palate, and sometimes of all the
 “teeth, and those also which usually succeed the
 “frictions with mercurial unctions.” But these are
 all the effects of a powerful mercurial salivation, for
 the vapour of arsenic produces other evils far differ-
 ent. If those observations, which the celebrated
Astruc † collected from various experiments in insti-
 tuted hospitals, be considered, it will evidently ap-
 pear, that the method of fumigating, for curing the
 venereal disease, can by no means be preferred to other
 cures attempted by crude mercury ; hence it is at this
 time exploded, and seldom used except by quacks,
 though

* Aphrodisiac. p. 807.

† De Morbis Venereis, Lib. II. Cap. IX. p. 178. & seq. in
 secunda editione.

though still the fumigation of cinnabar may now and then be applied to any determined place, so as that the fume may touch a hard buboe in the groin, for example, which obstinately resists suppurating remedies, and dangerous venereal ulcers in the nostrils. I have sometimes seen this tried by prudent physicians, yet by a very weak dose. It was recommended, as before said, for the cure of the venereal disease by the fumigations of cinnabar, that there should be not less than half an ounce, nor yet more than a whole ounce of cinnabar, in every dose; such a fumigation was daily applied, and sometimes twice in the day. The more prudent physicians, who tried this remedy, only applied fifteen grains of it, and repeated the fumigation every third day, thus abstaining two days from it: ten grains were only applied to each dose, when the vapour was to be attracted at the mouth and nostrils, that the lungs should not contract injury from thence. *Fracastorius*,* who so elegantly described the venereal disease in verse, pronounced the same opinion, thus:

*At vero & partim durum est medicamen, & acre.
Partim etiam fallax, quo faucibus angit in ipsis
Spiritus eluctansque animam vix continet ægram.
Quo circa totum ad corpus nemo audeat uti,
Judice me; certis fortasse erit utile membris,
Quæ papulæ informes, Chironiaque ulcera, pascunt.*

But as the venereal disease chiefly manifests itself in cutaneous evils, pustules, spots, and ulcers, and as the physicians had seen the remarkable efficacy of mercury in curing every foulness of the skin, it is not wonderful that they should seek a cure for this new disease, as they were almost all accustomed to the virtue of mercury, whilst other usual methods of curing diseases scarcely lightened this, and could never have cured it.

But

* Aphrodisiac. p. 191:

But because mercury had been condemned by the antient physicians, various were the opinions of those who undertook to cure this disease, concerning the application of it, for when they had seen the efficacy of it in subduing the venereal disease, either by an external or internal application; many of them would rather that this disease should be cast forth by the external use of it; indeed mercury fully affords such like effects by whatsoever way it enters into the blood, and may be moved with it through the vessels; the humours are loosened, then go out by various ways from the body when freed, the whole body becomes emaciated, and, unless this remedy be applied with prudence, the miserable patients become sometimes so exhausted by it that they miserably perish.

It was said, that mercury produced its greatest effect by salivation, which from it, by an internal as well as by an external application of it, equally ensues, as is known to all men; for a great quantity of foetid acrid saliva, which often corrodes the internal parts of the bones, flows out in an almost continued stream from the mouth: likewise, as the salivation begins, there is a great change observed in venereal ulcers, whose colour and corruption are much amended; the head-ache, and nocturnal pains are diminished; the pustules, and foul spots of the skin all gradually disappear. *Fracastorius* feigns a miserable young man, infected with a cruel Lues, to have humbly prayed to arrive at the most internal bowels of the earth, and whilst accompanied and guided by a nymph; that he every where there had seen *lacus, latè undantes, liquidoque fluentes argento*: "wide lakes flowing with waves of liquid silver." The nymph then tells the patient:

*Argenti ter fonte salubri
Perfundit, ter virgineis dat flumina palmis
Membra super, juvenem toto ter corpore lustrat,*

*Mirantem exuvias turpes, & labe maligna
Exutos artus, pestemque sub amne relictam *.*

Whilst the patients are so rejoiced that the obstinacy of the disease yields to the salivation, they very courageously suffer the molestations of it, which are not indeed light.

But after that youth had been cured by the quicksilver bath, he returned from the shades of darkness to wish'd-for day.

*Accepit nova fama fidem, populosque per omnes
Prodiit haud fallax medicamen, coeptaque primum
Misceri argento fluitanti axungia porcæ.*

He moreover enumerates various remedies which are usually added to the mercurial ointments, and advises, that the whole body, except the head, belly, and parts about the heart, are to be anointed or rubbed with it; he also orders the body to be covered up with much bed-cloaths to create sweat; then adds,

*Hæc tibi bisquinis satis est iterasse diebus;
Durum erit, at quidquid tulerit res ipsa, ferendum est.
Aude animis, tibi certa salus stans limine in ipso
Signa dabit. liquefacta mali excrementa videbis
Assiduè sputo immundo fluitare per ora,
Et largum ante pedes tibi mirabere flumen,
Ora tamen foeda erodent ulcuscula*

Some have thought that the stench proceeding from the saliva of patients, in the time of salivation, was caused by the foetid virus of the venereal disease, and the humours it had corrupted, as they were by this outlet expelled from the body. They were confirmed in that opinion from beholding the lips

* Aphrodisiac. p. 193.

lips, cheeks, palate, and even the tongue sometimes deeply corroded by the acrimony of the saliva, which washed or moistened all the inward parts of the mouth. It is certain, that some have perished, whilst it was thought by quacks, that the whole disorder was carried away from the body with this saliva; hence they daringly raised enormous salivations, yet not without danger of suffocation, or protracting the spitting, until the patients were entirely exhausted.

But it is certain, and hath been proved by many experiments, that even the most sound persons, who never could have been suspected to have contracted a venereal virus, have fallen into a salivation by an imprudent external or internal application of mercury, and have also discharged a very foetid saliva, in as large quantities as those who were affected with the worst venereal disease, and underwent a salivation for the cure of it. *George Dordonus*, a physician of Placentia, has opposed this error, and proved also, that a salivation in sound men will follow an imprudent use of mercury: he says, *Sibi multoties, in componendo talia medicamenta, tantam humiditatem ab ore resudasse, ut sibi summo fastidio esset*: “that he had often spit so much in compounding such medicines, that it was excessively loathsome to him.” *

Some have attempted to provoke the flux of a salivation by acrid sialagogues, without the application of any mercurial remedies, in order to cure the venereal disease; but a cure never succeeded by that method. Mercury is required for curing the venereal disease, and a salivation in consequence thereof, certainly denotes the medicinal power of the mercury brought into action; but it does not from

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hence

* Astruc de Morbis Venereis edit. secund. Tom. II. Lib. VI. p. 784.

hence follow, that the venereal virus is expelled from the body by the salivation.

For it cannot be denied, that the infected have sometimes been cured of the venereal disease by the repeated use of mercury, though no salivation ensued: yet the celebrated *Astruc** judges such patients to be perfectly cured, and congratulates them, *quod illis datum sit, rara satis felicitate, absque tædio & periculo salivationis, atque adeo tutiusque commodiusque, a Venereo morbo convalescere*: “ that they have been happy enough to
 “ obtain a cure without the tediousness and danger of
 “ a salivation, by both a safer and more commodious
 “ method.” But as such patients are ever apprehensive that the cruel contagion still lurks in the body, somewhat palliated but not totally destroyed, he encourages such patients by the following words; *veritos, ne, defectu salivationis, curatio quoque defectura sit; ac si seminum morbosum profligari non possit, nisi foras exterminetur*: “ afraid that there can be no
 “ cure without a salivation, as if the seeds of the disease cannot be extirpated except they are expelled
 “ through that outlet.” That he therefore may rid such unhappy patients from all their fears, he farther adds, *Sane, cum morbus ille contrahatur absque ullo humore conspicuo, qui intro subeat, nequaquam mirum videri debet, si perfectam curationem recipere possit, sine manifesta ullius humoris evacuatione. Adde porro, defectum salivationis plerumque suppleri alvi fusione, diuresi, sudatione, vel saltem insensibili perspiratione; quæ singulæ evacuationes deficientis salivationis vicariæ esse solent*: “ Truly, as this disease may be contracted
 “ without any conspicuous humour which may have
 “ penetrated the internal parts, it ought by no means
 “ to be looked upon as wonderful, if it can receive
 “ a perfect cure without the manifest evacuation of
 “ any humour: moreover add, that the want of a
 “ salivation is supplied for the most part by copious
 “ stools,

* De Morbis Vener. Lib. IV. Capit. VIII. Sect. I. p. 368.

“ stools, urine, wasting, sweating, or at least by an
 “ insensible perspiration; for every one of these eva-
 “ cuations is accustomed to supply the defect of a
 “ salivation.” * Whilst I attentively examined all
 the circumstances which happen in venereal ulcers,
 after mercury has been applied to raise a salivation,
 I manifestly saw the bottoms of these ulcers cleansed,
 the sloughs separated, and the lips of them, which
 were before of a livid or a deep purple colour, put
 on their natural hue. Those racking nocturnal
 pains, which affected the patient’s joints and bones,
 were mitigated before the salivation began. I then
 seriously began to think, as these signs taught that
 the mercury had already acted efficaciously upon
 this disease, whether it might not be possible to cure
 the venereal disease without a salivation, provided,
 the patient was kept in the same state for some length
 of time; and also whether the same effect might not
 be obtained by a far less quantity of mercury than
 is required for exciting a salivation. We have be-
 fore seen the quantity of mercury, contained in thirty
 grains of burnt cinnabar, prove sufficient to bring on
 a salivation, and disturb the body all over in a won-
 derful manner, when used by way of fumigation.

I have been staggered at the opinions of men,
 excellently well skilled in the art, who have stated
 the admirable action of mercury, as dependent on
 its great divisibility and weight. *Argentum vivum*
enim, quacumque via immistum sanguini vitali, quum
sit sanguine ipso decies & ter ponderosius, agetur,
vi cordis, & arteriarum contractione, tanto majore
impetu in compagem sanguinis, ut eam penitus de-
struat, globos rubros resolvat, serosas flavas immi-
nuat sphaerulas, reliquasque etiam partes ejusdem in
minutissimas frangat, & ita in laticem subtilem, pu-
tridum, vasis exeuntem, convertat. Sed & notum est,
elementa argenti vivi incredibiliter exigua agnosci,
 X 3 utique

* De Morb. Venereis Lib. IV. Cap. VIII. Sect. I. p. 368.

*utique globis serosis sanguinis longe tenuiora ; sane, dum poros cutis, intacta virtute, ingreditur, cognoscitur, quod elementis majoribus sanguinis longe sit penetrabilius. Dum vero in meatus densissimi corporum, auri, tam facile se insinuat, ipsa forte aqua magis, divisa in tenuitatem particulis constare, colligitur ; licet, attractione ingenta suarum partium, ad certum gradum tenacitatis se colligat. Tandem & maxime immutabile hoc ipsum fossile videmus, omniumque forte corporum cognitorum minime rodens, vel acre. Quibus sane cunctis rite expensis, apparet vera vis, qua ad expugnandum hoc malum solus efficax, sufficiens solus, Mercurius habetur :** “ For mercury, by whatsoever way
 “ mixed with the blood, as it is thirteen times heavier
 “ than the blood, will be actuated by the force of
 “ the heart, and the contraction of the arteries,
 “ with so great an impetuosity on the cohesion
 “ of the blood, that it may totally destroy it, dissolve the red globules, diminish the yellow serous
 “ little spheres, and break the rest of its substance
 “ into most minute particles, and so convert them
 “ into a subtiler putrid sanies flowing out from the
 “ vessels. But it is also known, that the elements
 “ of quicksilver are acknowledged to be so incredibly small, that they are far smaller than the
 “ serous globules of the blood ; truly, when it enters the pores of the skin in its full power, it is
 “ known, that it is far more penetrable than the
 “ greater elements of the blood ; but since it insinuates itself into the pores of gold, the most condensed of all bodies, even more readily than aqua
 “ fortis, it may reasonably be supposed to consist of
 “ most minute particles, though it may collect itself to
 “ a certain degree of tenacity, by the natural attraction of its parts : and, finally, we observe this
 “ fossil infinitely immutable, and perhaps the least
 “ corrosive or acrid of all known bodies. All which
 “ being

“ being rightly considered, a specific power of van-
 “ quishing this disease appears in mercury, which is
 “ solely efficacious, and solely accounted sufficient for
 “ this intention.”

This simple and ingenious explication of the properties of quicksilver by *Boerhaave*, has given universal satisfaction : hence I was willing to transcribe the passage in his own words, that the sense might be no ways changed ; yet permit me to propose those difficulties I labour under, in believing that the efficacy of mercury on the human body can be accounted for, by its gravity and divisibility only.

In *the chapter on obstructions*, in Sect. 135, No. 4, those remedies which dissolve obstructions bred in the body by attenuating the concretions have been already treated of, therefore it will not be useless to recall those circumstances here to memory which concern the action of mercurial remedies.

Pitcairn states, that the sole gravity of quicksilver is sufficient to explain its admirable effects ; nay, he boldly adds, that gold reduced into a form capable of being mixed with the blood, will contain a power proportionable to its weight, and will excel all other medicines as much in virtue as it does in gravity.

But can it be explained by the weight of quicksilver, why the humours dissolved by its force are discharged through the salival ducts, rather than through any other parts of the body ?

Besides, the mercurial preparations sold in the shops, given in small quantity, display all the effects which ensue in consequence of the administration of a much larger quantity of crude mercury. A quack used red precipitate, which he formed into pills, one of which being given, the body was totally disturbed and vehemently agitated, so that having given such a dose to a weak man, he sent him from among the living the same day before dinner-time.* Does it appear

X 4

likely,

* Aphrodisiac. p. 713.

likely, that mercury excites such disturbances by its excessive gravity, since a salivation is excited by white precipitate, or mercurius dulcis, which are of a far milder nature? Can mercury, when in the human body, be extricated from thence and assume its natural form, as that cannot be obtained by art, except by means of a very fierce fire, and by an addition of such medicines as powerfully attract the acid united to the quicksilver, so that a few grains of mercury may return to their pristine form, from which such an effect cannot be expected?

Indeed it is usually said, that the mercurial saline globules, loaded with saline spiculæ, by their metallic weight, united to the most concentrated acid, are capable of dividing all concretions which they meet with, in a far greater degree than crude mercury alone can effect; but when the mercury is dissolved in spirits of nitre, it is precipitated by pouring thereon a solution of sea salt, then it is repeatedly washed with water, and the powder that remains at the bottom of the vessel becomes very mild and almost insipid, yet twenty grains, and even a less quantity of it, given in divided doses, are sometimes sufficient to cause a salivation.

But another power lurks in the quicksilver which seems so mild and gentle; for, without any other addition, being beaten in a glass mortar, it produces a soft fine black powder of an acrid metallic taste, much like that of copper. Quick-silver rendered excessive pure, by sixty-one distillations, afforded a greater quantity of such a powder: but quicksilver also inclosed in glass vessels of a conical form, and with broad bottoms, hermetically sealed, and then exposed for many months to a heat of 180 degrees, produced a powder similar in every quality to this. From a simple distillation of quicksilver in a clean glass retort, a red powder was produced, which was shining, very brittle, and of a most acrid metallic smell, extremely nauseous to the taste, and so penetrating,

trating, that its taste could hardly be got out of the mouth; it strongly disturbed the human body a long time, as it increased all the different excretions; yet these powders so acrid, and which so greatly ruffled the whole body, without the addition of any other matter were produced from pure mercury, either by mechanical triture, or by a heat twice greater than that of a healthy body; and what is wonderful, those powders which were distilled in the retorts were, by the heat of a strong fire, changed into quicksilver again, except a few grains only which remained fixed at the bottom of the retort.

Does the efficacy of quicksilver therefore depend upon the common nature or quality of all bodies, or does it not rather depend upon the singular property of its own nature, which is only to be known by experiments, and ought to be attributed thereto? Has it ever been manifested, by any experiment, that gold, though much weightier than quicksilver, has produced similar effects in the body, on account of its greater specific gravity? Who ever saw a salivation brought on by gold? When gold is dissolved in aqua regia, by an effusion of salt of tartar it is precipitated; being then often washed with hot water, a calx of gold remains, which has acquired such force, that it is by a little more heat dislodged with a loud report. Quicksilver treated in the same manner produces a calx which can bear great heat without any explosion, whilst it again returns to its pristine form.

Besides, it is to be observed, that metallic bodies can hardly act in the human body, unless they are first dissolved in their menstrua, and so rendered fluid. As quicksilver is of its own nature a fluid, it can enter the vessels of the body and be mixed with the circulating humours without any other mixture; and as it is not malleable like other metals, many believed it was an impropriety to call it a metal, and would rather call it a metallic water; but all other

other metals, when they are dissolved in menstrea produce a new composition, from the metal and menstrea joined together, in which are found medicinal properties which pre-existed neither in the dissolvent menstruum, nor in the dissolved metal, but from the union of both fresh virtues are produced, which could neither be foreseen from the common laws of all bodies, nor can be explained by them.

It is not proper to dwell more extensively upon this subject here. *The Chapter on Chemical Menstruas** merits attention; for there many very useful observations, as well concerning the action of menstrea, as of the new medicinal powers produced between them and divers bodies, in consequence of their union with each other, are contained.

It is sufficient for a physician to know, how crude mercury acts when applied to the human body, though he knows not by what manner it may act. I have found the same difficulty in determining the manner in which other remedies work upon the human body: I have read many authors who have wrote on the powers of medicines, and have indeed learned many excellent things from thence concerning the use and various applications of remedies; but I never could clearly understand, why *Rhubarb* should purge by stool, or, why *Opium* should occasion sleep: no man of reputation will refuse to make a sincere confession of his own ignorance.

Those arguments, therefore, being laid aside, the method and way whereby quicksilver can be safely applied to the human body, for efficaciously curing the venereal disease, merit our consideration.

It is known, that men, famous in this art, have been divided in opinion concerning the method of curing the venereal disease by quicksilver: some have recommended the external use of it; others made their patients take it crude, or some remedies prepared

* Herm. Boerh. *Chemiæ* Tom. I.

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prepared from it by art. It is no wonder, that many dreaded the internal use of mercury, for it was condemned as a deadly poison by the antient physicians, as was before said, in Sect. 135, 4. *Dioscorides* condemns it because it corrodes the interior parts by its gravity. *Pliny* calls it the vomica of eternal liquor, and the poison of all things; from whence he also states, that the use of red lead (cinnabar) in medicine, is a rash undertaking, as quicksilver is boiled from it. *Galen* treats but little about mercury, for he acknowledges, he had no experience of its effect, neither internally nor externally applied; but as the more modern Greek physicians followed *Galen's* rules in almost all matters, hence the use of crude mercury in medicine was hardly ever prescribed by these also. The Arabians recommended the external use of mercury for curing cutaneous diseases.

But after the venereal disease had spread through Europe, the use of mercury was tried, that the physicians might encounter that new disease by an unusual remedy; nor did they only apply it externally but internally also. The celebrated *Astruc* * believes *Petrus Andreas Matthiolus* to have been the first who attempted to cure the venereal disease by an internal application of red precipitate. *Joannes de Vigo* and *Nicholas Massa*, were acquainted with this remedy, having experienced its efficacy in curing ulcers, on which they sprinkled that powder; but it is proved by many observations in the same place, that it is very likely, that they were contented with the sole external use of this remedy. But *Matthiolus*,† after having described the preparation of red precipitate exactly, orders it to be washed with plantain and sorrel water, then prepared pearls, and a little Jacinth stone being added, with some
sprigs

* De Morbis Vener. Lib. II. Cap. VII. p. 126.

† Aphrodisiac. p. 266.

sprigs of the herb motherwort; he gave five grains of this preparation with twenty grains of the *eleæ conciliatoris* formed into five pills, which were to be taken an hour before break of day, after which the patient was to remain five hours in bed. *Brez (mibi crede) Gallici dolores hoc catapotio elidentur pituita etiam, & atrabilis, vomitu, nec non alvi dejectione, evanescent*: "The venereal pains are (believe me) destroyed in a short time by these pills. "as also the black bile and phlegm, all vanish by vomiting and stool." But he so confided in the force of this powder, that he exhibited five or six grains of this remedy also in other obstinate diseases, and indeed with success too.

Crude mercury was afterwards applied in the form of pills, with some purging remedies also added to them; such were the pills of *Barbarossa* so called from that famous king of Algiers, and president in maritime affairs among the Turks. these pills consisted of crude mercury with *rhubarb* and *diagridium*: a twentieth part of wheaten flour was added, with ambergrease and musk, which, together, equalled the weight of the flower; from whence this mass exhaled a powerful fragrance; the whole was formed into a mass, with the juice of lemons, of which a pill, the bigness of a small pea, was daily given, in the evening before supper, but scarcely four grains of mercury were contained in that pill.* Many other forms of these pills may be seen † which agree with each other in containing quicksilver and the juice of lemons so long beaten up together, *donec taliter fuerit extinctum, ut amplius internosci non possit*: "until it had been in such a manner killed, that the globules could be distinguished no longer." Many different purging ingredients occur in these various recipes, and also

* Astruc de Morbis Venereis Lib. II. Cap. VII. p. 127.

† Ibidem, Lib. V. tit. 2. Tom. II. p. 672, 673.

less quantity of the ambergrease and musk ; there is one only which admits no purging ingredient.

The celebrated *Astruc* * in another place says, that such-like pills are even to this day cried up as a panacea for almost all diseases, and are recommended as a secret specific remedy for curing the venereal disease, under the title of the pills.

Belloste, who lived in this age, and acquired great fame in the art of surgery, particularly by his treatise, entitled, *Le Chirurgien d'Hôpital*, of which there have been many editions since its first publication in Paris, in the year 1695. To this little book he subjoined another, which was published at Paris in the year 1724, under the title of *Suite du Chirurgien d'Hôpital, &c.* in the first dissertation of which he entirely employed his discourse in the recommendation of some mercurial pills he sold ; but he carefully concealed their composition, that he might relieve *inopem familiæ suæ conditionem, quam, iniquitate temporum, fortunis omnibus everfam esse queritur, & quam sperat sustentatum iri pilulas suas venditando* : “ the indigence of his family, which he bemoans, “ as having been deprived of their estate by the iniquity of the times, and which he hopes to raise “ to its former condition by the sale of his pills.” That same hope or intention of gain, is always the origin of an arcanum ; yet it is not denied, that his pills consisted of crude mercury mixed with some cathartics which operate gently by stool : hence it appears, that *Belloste's* pills differed not much in virtue from those called *Barbarossa's* pills ; it is easy to change the flavour and scent in such-like compositions ; any one can at will add this or that drastic or milder purging remedy, and augment or diminish the quantity of mercury, so that any novice in pharmacy is capable of inventing nostrums : hence these vast crops, which commonly spring up every year in the

* *Astruc de Morbis Vener. Lib. IX. p. 1091, 1092, 1093.*

the greater cities ; and as soon as a stranger arrives, of an age adapted to the Paphian games,

Porrigitur turpi charta pudenda manu,

“ A shameful bill springs from a filthy hand,”

which sets forth the hyperbolical powers of this or that secret remedy for curing the venereal disease in pompous words.

But as these quacks sometimes deceived the vain hope of the credulous vulgar with unactive remedies, some others, still worse, at a hazard gave them mercurial remedies internally, which were indeed efficacious, but dangerous also, when not administered under the care and inspection of a skilful and prudent physician : many disasters have happened, and hence the most part of mankind were struck with horror at the chemical preparations of mercury ; and the profession were more willing that the cure of the venereal disease should be essayed by an external use of mercury, as they believed that method to be the safest : they therefore extolled it highly.

The celebrated Astruc † makes use of many arguments to prove, that these rough preparations of mercury, by their saline spiculæ injure the stomach, lungs, bowels, and all the other viscera and soft parts of the body ; so that the use of them is never clearly inoffensive. But who ever saw these spiculæ in mercurial preparations ? yet upon this account he orders almost all mercurial precipitates to be abstained from, as they create immoderate vomiting and purging, weaken the stomach, nay, often corrode it.

When quicksilver is dissolved in an acid, and is freed from its union therewith by an effusion of some other salts, there falls a kind of powder to the bottom of the vessel, which is edulcorated by repeated

† De Morbis Venereis, Lib. II. Cap. IX. p. 147, 148.

peated lotions, and is kept in the shops. Is it likely, that all these little spiculæ, of which only he was so fearful, still remain in such a mercurial preparation * When quicksilver is boiled in a glass vessel, with the acrid acid oil of vitriol, until it becomes dry, there remains a saline mass at the bottom, composed of the vitriolic acid, united with the mercury; but the union between the acid and the mercury is so weak, that pure water being poured thereon, it immediately falls to the bottom of the vessel in the form of a yellow powder, by the chemists called *turbith mineral*, which is edulcorated by repeated washing; and, in certain places, this powder is freed from all its adherent acid, by the accension of spirit of wine poured on it: yet this produces a very efficacious remedy for curing of venereal warts, as was before mentioned, in Sect. 1463, and do these saline spiculæ remain here also?

Nor does he condemn these mercurial preparations in a manner as if they were altogether injurious, but only disapproves of them as but of little efficacy in subduing the venereal disease, because they exert so slight a power in the blood, and on the virus mixed therewith: he also remarks, that the atoms of mercurial preparations, when they at length arrive at the mass of blood are full of acid spiculæ, which but faintly, slowly, and sparingly reassume the natural form of mercury, so that they can have but little efficacy in subduing the virus of the venereal disease. But the celebrated author * lays it down for a certainty, that all the power of mercury depends upon that form by which it is divisible into infinitely small particles, every one of which readily assumes a globular form.

But I think I have by the preceding arguments demonstrated, that the admirable efficacy of quicksilver depends in no manner upon its specific gravity,

* De Morbis Venereis, Lib. II. Cap. IX. p. 146.

vity, and the spherical figure which mercury, divided into the most minute atoms, always retains. Mercury by trituration alone, or digestion, loses its spherical form, and is changed into a powder of an acrid metallic flavour, which vehemently and for a long time disturbs the human body when taken in small doses; and that same powder, being exposed to a strong fire, is changed into quicksilver again, no way acrid, and is equally, nay, more fluid than before the process.

I readily agree, that mercurial preparations will never revivify in the human body; for I never believed that to be possible; as it is certain, from numerous and repeated experiments, that to effect this, a far greater heat is required than can ever possibly exist in any living body: but it cannot therefore be concluded, that these same preparations have not sufficient efficacy to cure the venereal disease; for it can be proved by direct experiments, that this may be accomplished by the use of these preparations; and that whatever is to be expected from mercurial unctions, may also with reason be expected from them.

A salivation is expected to happen in consequence of mercurial frictions, by all who advise the external application, and condemn the internal use of crude mercury, and its preparations. The celebrated Astruc * lays down the following as a general practical axiom: *Compertum est experientia, Mercurium exstirpandæ Lue Venereæ parem esse, quoties legitimus ptyalismus movet, &c. Errant, igitur, qui putant, salivationem in curanda Lue cane pejus & angue vitandam esse, ideoque in eo toti sunt, ut parcissimas rarissimasque frictions adhibeant. Sic enim operam ludunt suam, suosque deludunt ægrotantes. Nec multo levius peccant, qui motam, vel imminuentem, salivationem intempestivis coërcent purgationibus; vel reprimunt*

* De Morbis Venereis, Lib. IV. Cap. IX. p. 382.

nunt; atque adeo Mercurium, dum optato instat operi, vocant, & amovent sic enim id unum videntur agere, ut operose nihil agant: "It has been found from experience, that mercury is capable of extirpating the venereal disease whenever it raises a proper ptyalism, &c. they therefore err who think that a salivation is to be shunned like fire and the sword, and therefore advise a sparing application of the frictions, and at long intervals, for thus they lose their labour, and the patient will be disappointed of a cure; nor do those who restrain or repress a rising or plentiful salivation by unseasonable purges err less; for by so doing, they expel the mercury out of the constitution at the very instant it is taking the desired effect, and thus seem busied in doing nothing."

This famous practitioner observes, that a salivation, in consequence of mercurial unctions, requires prudent management, lest it should come on too suddenly, and rise to too great an height, a circumstance which is never void of danger. *Sed placida, moderata, remissa, facile tractabilis, quæ ori inflammationem nullam, vel levem, quæ ulcera pauca, & superficialia, inferat, quæ unam, aut alteram, vel ad summum tres libras salivæ, intra viginti quatuor horas suggerat:* "But let it be gentle, moderate, and easily manageable, so as to cause but a slight or no inflammation of the mouth and face, and only a few superficial ulcers, such as will afford but a pint or two, or at the most, three pints of saliva in twenty-four hours."

If the signs of an imminent salivation do not yet appear, or if a salivation already brought on becomes slow or dull, whilst the symptoms of the disease are observed to require a more copious spitting, the frictions ought to be increased in quantity, or repeated at shorter intervals, or a larger proportion of mercury should be mixed with the ointment, that it may produce the due quantity of saliva.

But all these requisites for keeping up a mercurial salivation, already brought on, can be more certainly obtained, nay, more safely too, than by mercurial unctions, by mercurial preparations internally taken.

Nobody doubts that a salivation may be excited by mercurial preparations inwardly taken. When these are exhibited in small and frequently-repeated doses, it plainly appears, that it entirely lies in the power of the physician to promote or slacken the salivation, according as the disease requires; for if it rises too high, he abstains immediately, or if it more slowly proceeds, he quickens it with a fresh dose of the mercurial preparation; then, if it goes on with due moderation, he sustains it in that state by some doses given at greater intervals of time, that the salivation may not diminish too much, nor cease sooner than is required.

Besides, it is evident from numerous observations, that mercury quickly and powerfully operates in some bodies, and very slowly and remissly in others: hence a prudent physician will easily determine how to act according to the nature of the case; for he can always know what quantity of mercury he has administered, which never can be exactly determined when mercurial unctions are used: he indeed knows the quantity of mercury contained in the unction, knows the weight of the quicksilver applied by every friction to the skin, but is evermore ignorant of the quantity that enters the cutaneous vessels; for the flannel, with which the body is warmly covered after the first friction, and during the whole time of the salivation, without being changed, sucks up a part of the unction: this filth increases upon the flannel at every repeated friction; from whence a salivation sometimes suddenly comes on against the doctor's will, which is attended with danger, and a sudden swelling of the jaws which threatens a suffocation: some then order the flannels and bed-linen, thus fouled with the mercurial

rial unktion, to be changed, and replaced by other clean, dry, warm flannels and sheets, after the skin has been washed clean with soap-suds and thoroughly dried; but this lotion does not at all cleanse away that part of the unktion which adheres between the scales of the outside skin, or at least it is difficult to be done, and the wretched patients bear extremely ill such tedious repeated washings, and the changing of their bed-linen, during the time they suffer the grievous tortures of a high salivation.

Besides, the place in which the patient to be cured by mercurial unktions lies, contains a body of air filled with mercurial atoms, which the patient continually inspires, and which moisten the whole surface of the body; and the salivation may from this cause be kept up or augmented, though the physician would have it diminished.

We have a remarkable instance of this kind from *Hildanus* †. A young man, severely labouring under the venereal disease, was under his care; this man had a wife, about thirty years of age, who was equally infected by him. Though the winter was excessive sharp, he did not venture to defer her husband's cure, but anointed him repeatedly with mercurial unktion; then, on account of the great severity of the already inveterate disease, he persuaded the woman to stay within doors with her husband, and confine herself to the same hot room her husband was salivated in, lest she should receive farther injury from the cold air, and the disease thereby become more obstinate. The room was both narrow and low. *A solo vapore unguenti ita alterata, & ad salivationem indueta, fuit mulier, ut eodem modo ipsi atque marito pituita ad os deflueret, exulceratio quin etiam oris superveniret, &c. Tandem adeo aucta fuit salivatio, ut in proprium cubiculum, a marito separatum, collocanda fuerit. Hac, una*
Y 2 cum

† Observat. Chirurg. Cent. V. observat. 98. p. 495.

cum viro suo, a dira ista Lue plenissime convaleuit, et salivatio non fuisset: “The woman was, by the vapour of the unction alone, so changed, and such a spitting brought on, that the saliva flowed from her mouth almost in the same quantity as it did from her husband’s, and her mouth was also ulcerated, &c. The salivation at length so increased, that she was obliged to be placed in a room apart from her husband. She, together with him, perfectly recovered from the disease, though she had never been rubbed with unction.”

It is from hence understood how badly the diseased are treated when many of them lie in the same ward together, and are rubbed with mercurial unctions. This takes place in hospitals, instituted for curing the venereal disease, where the method of salivating by unction prevails.

The danger of a salivation also threatens the sound persons who attend the diseased, and are obliged to continue in such air both night and day.

The celebrated *Astruc* * directed the frictions not to be made by the patients themselves, but rather by the attendants or servants, who are more dextrous and active at this business; nor would he have their hands covered with gloves, or a bladder, while they executed this office, but naked, to cause a greater heat for the friction. He confesses indeed, that such an attendant stands in danger of a salivation, if he rubs many patients the same day; yet he affirms, that there is no danger in rubbing a single patient, so that the servant well washes his hands after he has finished the friction. But no prudent man will undertake this office; for who can promise that he has nothing to fear from a salivation? The mercurial unction is laid on the palms of the hands and forced by a strong friction into the cutaneous vessels of the patient intended to be salivated.

* Lib. II. de Morbis Venereis, Cap. IX. p. 149.

vated; hence it may equally enter the cutaneous vessels of the servant, which are very numerous and minutely ramified in the palms of the hands, unless these parts are become callous from hard labour.

It happens, that the palms of the hands of many persons are almost continually moistened with sweat. When physicians expect a salutary natural crisis in diseases from a gentle sweat, it is known, that its first traces are perceived in the palms of the hands. This part of the body is therefore best fitted for exhalation and absorption: hence it is, for the most part, ordered, that the patients, who are to undergo a salivation, should rub themselves, lest any other sound person should incur the danger of a salivation also; or when many are at the same time under cure, for the venereal disease, in an hospital, they may rub one another † in the presence of the surgeon who directs their cure.

Thus he will be certain, that none will experience the efficacy of mercury but those who require its use, that is, as far as it is applied by frictions; but when many venereal patients lie in the same place, the surgeon has always reason to fear, lest the mercurial atoms, dispersed through the air, should enter the body against his knowledge and will. Whilst the salivation proceeds kindly, all prudent physicians leave off the frictions, or at least apply them with a more sparing hand, or repeat them at longer intervals, that the present salivation may be kept up, but not augmented: as the mercury, in this case, still proceeds entering the body, though the frictions may be suspended, it is evident how many accidents may arise from it.

Nor is this a vain fear, as appears from observations †. The celebrated *Goulard* was astonished to see those, who were only under preparation for the

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† Goulard sur les Malad. Vener. p. 12.

† Ibidem, p. 55.

frictions of mercurial unction, fall into a salivation, when, on account of the poverty of the charity, they lay in the same narrow ward with others who had been already rubbed with the unction. He acknowledges this to have often happened. He relates the case of a soldier who had the scurvy,† and was ordered to lie in the same room which was destined for the reception of venereal patients to be cured by salivation with mercurial unctions: the wretch's face swell'd, a high salivation ensued, and ulcers attended with a gangrene, of which he perished, arose in the inside of his mouth, it not being then in the power of art to stop its progress. *Petit*, so famous in the art of surgery, in his treatise on venereal complaints in the bones‡, recommends a salivation excited by mercurial frictions, and condemns the internal use of mercurial preparations, as *inefficacem, & semper perniciosum*: “inefficacious and
“always pernicious;” yet he does not deny but that the dose of mercury, necessary to cure the disease, cannot be determined at the time of the mercurial friction, according to the different constitution of the patient, as the atmosphere is filled with mercurial atoms in those places where the diseased lie to be cured by mercurial unctions in hospitals, whence the patients are debilitated and rendered delicate; besides the mercury received by friction, they also inhale those mercurial atoms which float in the air, and thus imbibe a quantity of it no way at all proportionable to their strength, so that they, after a violent fever, convulsions, and racking swellings in the head and fauces, perish. §

Wherefore he advises, that the patients, who undergo a salivation by mercurial unction, should lie in
separate

† Goulard sur les Malad. Vener. p. 51.

‡ Traité des maladies des os. Tom. II. p. 496.

§ Goulard sur les Malad. Vener. p. 56.

separate chambers, or at least that but few of them be in an extensive ward together, and that the windows be often opened, that the air may be changed: but it is not safe, as is well known, to open the windows during the time of a salivation, particularly if the weather is cold.

Besides, that danger may indeed be diminished if the patients are placed in separate chambers, but it will not be entirely taken away. It is known, that a part of the mercury transpires from the skin of the patients who have been anointed, or have inwardly taken crude mercury: hence such patients will remain in their own atmospheres loaded with mercurial atoms, and the same accidents will follow if they are confined in small rooms; but it is impossible to place every single venereal patient in a spacious ward by himself, in an hospital.

All this great danger is avoided, if a salivation is raised by mercurial preparations internally taken: by this method we can be very certain of the quantity of mercury which is thrown into the body; and these preparations can be given in so small a quantity, that they by no means hurt the bowels, lungs, or intestines; nor do they produce vomitings, or evacuations by stool, and yet a salivation ensues: and yet milder and safer remedies may be chosen, by which the salivation, already begun, may be kept up, or increased if there be need. Besides, mercury operates not equally on all persons; for the symptoms which indicate a high salivation, are presently produced from a small quantity of mercury taken by some; for others, a far greater quantity is required, particularly for those who have had more frequent need of the efficacy of mercury, as hath been cursorily observed by all those who have described the cure of this disease. Hence it appears, how very needful are prudence and attention for curing the venereal disease by the use of mercury: but as such miserable patients often shun the skilful

practitioners, through shame of the filthy disease they fall into the hands of quacks, who treat this disorder in a most ignorant and improper manner, and miserably destroy these suffering wretches with unabashed impudence.

For crude mercury, notwithstanding all that may be said of its mild nature, will injure the human body, even the most healthy, when it enters it by an external application of a greater quantity than needful. Many were of opinion, that a more certain and happy cure was effected by mercury when the patients could bear such copious unctions before the signs of a salivation appeared; for they particularly hoped to vanquish the venereal disease by a large quantity of crude mercury: nay, it has been received as an approved practical axiom, from most certain experience, *tanto certius sanari Luem, quanto copiosius argentum vivum in corpore hæreat* :* “the
“venereal disease is cured the more certainly in proportion as the mercury more copiously adheres in
“the body.” Hence all possible care should be exerted in preventing a salivation, partly because the mercury which flows through the vessels with the humours, soon passes off that way, and partly because the mercurial frictions must be suspended in the time of the salivation, or at least only applied in a less quantity or at longer intervals; whence the patient cannot take in a great quantity of mercury. This manner of curing the venereal disease, was called the method *per extinctionem*: “by extinction,” which was recommended by the king of France’s chief physician *Chycoineau*, in the university of Montpellier, where he brought it into practice, by a public dissertation he wrote thereon in the year 1718, and it has since been made use of by many.

But it is certain, that those who receive a quantity of crude mercury, dissolved into vapours, into the
body,

body, are rendered most miserable, lose all their strength, become paralytic, trembling, feeble in the joints, and live unfit for every thing; and, if these disorders are inveterate, the patient can hardly be restored to health. Such diseases are particularly incident to those artificers who are much employed in gilding of metals, or those who in any manner handle quicksilver for any long time imprudently. Those who boil quicksilver from the mines live miserably, and often perish in the vigour of their age.

From whence it may be concluded, that it is not at all safe to fill the body with crude mercury, for it sometimes separates from the humours with which it circulates, is deposited in various parts of the body, and creates still new accidents. *Antonius Musa Bravolus* † has more than once found quicksilver in the skulls of the dead in their graves: he saw a man also who vomited quicksilver, from being only three times rubbed in the arms and legs with mercurial unction. We read the like in *Bonetus*. § *Schenkius* † relates, that a great quantity of quicksilver was found in the bowels and brains of a little prostitute, who died suddenly. *Fallopious* testifies, || *se vidisse homines, inunctos per triennium ante, & venientibus gummatis in tibiis, detecto osse, vidisse ibi collectum argentum vivum.* *Hac ratione, inquit, ego non probo medicamentum: utor aliquando, quando non potui via Regia assequi intentum:* “ “ that he had seen men, “ who had been rubbed three years before with mercurial unction, having nodes and gummata in their “ legs; and that when their shin-bones were laid “ bare, a quantity of quicksilver was found collected there: for this reason, he says, I do not approve of this medicine; yet I sometimes use it, “ when

† Aphrodisiac. p. 694.

§ Sepulchret. Tom. II. p. 452, 453.

† Observat. Medic. Lib. VI. Observ. XII. p. 811.

|| De Morbo Gallico Cap. LXXVI. Aphrodisiac. p. 809.

“ when I cannot succeed by my usual method.” When *Fernelius* * with his instruments scraped the bones rendered carious by the venereal disease; he found some globules of quicksilver amongst them. Many other testimonies of this kind may be adduced, but I think these are sufficient to prove, that crude mercury when introduced into the body by friction, and circulated with the humours through the vessels, can join into a greater mass, and be deposited in various places of the body, frequently not without danger and damage.

That celebrated man *Targioni Tozzetti* † saw a book in manuscript, wrote by an uncertain author which contained many observations in physic and anatomy very worthy of being known. These were written in the sixteenth century, from the year 1567, to 1584. In this book we read as follows *Qui laboraverunt Venerea Lue, & illiti fuerunt, bis dum secatur corpus in Anatome facienda, magna fit hæmorrhagia, etiam invito plerumque sectore: similiter illis viventibus Aneurisma accidit: utrumque accidit quoniam hi habent venarum membranas admodum tenues, & subtiles, enervatas longo, & forti, litu. Hoc de magistro Carolo habui, qui id apprimè in quamplurimis observavit; & verum esse comperi:* “ Great hæmorrhages happen in the bodies of persons who die “ with the venereal disease, after having been rubbed “ with mercurial unction, when they are dissected. “ and that too, for the most part, in spite of the “ operator. An aneurism in like manner happens “ in such bodies when living; it happens to both, “ because they have the coats of the veins excessively “ slender, delicate, and weakened by long violent “ stretching. This I have had from my master Ca- “ rolus, who first observed this circumstance in “ many bodies, and I, from experience, have found “ his observation to be true.”

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* Patholog. Lib. VII. Cap. VII. p. 229.

† Prima Raccolta di Osservazioni Mediche, p. 91.

I confess I should not believe, that the texture of the vessels could be so debilitated by mercurial frictions as to cause an aneurism; but as quicksilver, most minutely divided in the mercurial ointment, can, when moved through the vessels, join into a greater mass, and be circulated through our vessels in its natural form, and then be deposited in various parts of the body; it appears not to be a groundless apprehension, that this metallic fluid, so much heavier than the blood, with the whole force of the left auricle of the heart, propelled into the arch of the aorta, at its first rise from the heart, may extend the particular part of its coats against which it beats, to a greater degree, than the blood propelled therein by the same force of the heart: but I think every body knows, as it is manifested by numerous observations, that such a place of the aorta, though but slightly debilitated by a great distension, forms an aneurismatic sac, which very soon grows larger, and at length bursts and causes sudden death.

I think that quicksilver, divided into very minute globular parts, cannot easily gather into greater globules again, as long as it is moved through the arteries, namely, the convergent vessels, and through which the circulation of the humours is not interrupted, and is carried on with some degree of velocity; but in the veins, where the motion is slower, it is interrupted by the valves, and particularly in the greater vessels, wherein the venal blood is circulated in a greater quantity, and with less impetuosity; these are the venal sinuses, the auricles, and cavities of the heart, wherein the divided parts of the mercury may gather into greater globules, which in a moment after may run into the curvature of the aorta, by the force of the heart, and with a degree of impetuosity proportioned to that of the specific gravity by which the quicksilver exceeds that of the

the blood; from whence an aneurism is to be dreaded.

Perhaps the like happened to the first man among the christians, who used *Barbarossa's* pills, *Et qui cecidit repente mortuus super pontem Avenionis, cum ipse ibi profugus esset propter prælia*: “and who suddenly “dropped down dead upon the bridge of Avignon “in his flight from battle.” Certainly nothing can be more dangerous to those labouring under an aneurism than quick motion. Yet what the celebrated *Astruc* * remarks, is true, for he says, that the sudden death of this person could not be ascribed to the use of these pills, of which only one, hardly containing four grains of mercury, was given to the diseased every evening. But as these pills are said to have produced admirable effects, they were, without doubt, given in too great a dose, or during a longer time than needful, and so, a great quantity of quicksilver was thrown into the blood, which at length became so powerful as to produce these evils.

All these circumstances which have been hitherto mentioned to have attended the external application of crude mercury for curing the venereal disease, have occasioned such an application never to have been recommended by my advice. *Nam tanta est ejus inconstantia, ut nunquam omnino exacte administrari possit; quum enim nimio ejus usu nocere times, parum proficis; cum eo, quod satis est, juvare cupis, sæpenumero valde lædis; adeo difficile est ejus vires metiri, Et rectum ab eo, quod non est rectum, in illo discernere* †: “For its uncertainty is so great, that “it can never be altogether exactly administered; “for when you fear to injure the patient by a too “plentiful use of it, you profit but little; when “you have recourse to a copious use thereof, you “as

* De Morbis Venereis, Lib. II. Cap. VII. p. 127.

† Alex. Trajan. Petronii de Morbo Gallico, Lib. VI. Cap. IX. Aphrodisiac. p. 1292.

as often do mischief to numbers with it; so that it is very difficult to regulate its powers, and to discern what is right from wrong." I have always preferred mercurial preparations which I knew could safely excite a salivation; for thereby I was certain of the quantity of mercury that entered the circulation; nor had I any thing to fear from a longer stay of the quicksilver than needful in the body, so as first to nestle there, and then be deposited in various parts of it.

S E C T. MCCCCLXVIII.

TH A T this salivation may be performed with success, let the diseased for some days first be filled with ptisan.

I always used the following method of exciting a mercurial salivation, for the cure of the venereal disease, until I afterwards began to use another mode of practice, which I shall hereafter mention.

I first examined whether the patients had strength enough or not, to undergo the tortures of a salivation, which certainly are not slight. If they were observed to have dried, withered bodies, to have weak lungs, to have before spit blood, and subject to a continual little fever, that raged with greatest violence in the evening, I always deferred their cure by a salivation, first attempting to mend the condition of the body with good diet, baths, and country air. Some such patients being impatient and tired of these delays, have sought the advice of more indulgent doctors; but they have almost all perished in the course of the salivation: the few who survived, led but miserable and short lives. We read many more like cases in other observations.* Unless the forces be increased by this method, and the

* Turner Siphylis, p. 327.

the body be rendered somewhat more plump or robust, I believe that a salivation cannot without danger be attempted upon such wasted emaciated bodies : six weeks are absolutely required for perfecting this cure.

For a whole week before mercury is taken, let soft light food be used, such as is moistening and antiseptic, made of rye, barley, or oats, with emollient plants boiled in broth or milk ; also boiled apples, and a small quantity of white flesh meats, such as veal, lamb, or fowls, rather stewed or boiled than roasted : let the patients drink be pure water, with a third part of new milk added to it. Mild small beer may be safely allowed those who have been accustomed to malt liquors.

But wine and the use of all spirituous aromatic liquors must be totally shunned.

When the humours are dissolved by the action of the mercury, and the salivation produces a great stench, all the parts will, as much as they possibly can, be fortified by such a soft antiseptic food, against the injuries of putrefaction.

Let the intestines be evacuated by eccoprotic purges and glysters, that the retained excrements may create no mischief in the time of the salivation, when the body is usually in a costive state : let the patient be bathed every day during this week, that the skin may be entirely cleansed, because the bed-linen will not be changed during the whole time of the salivation.

If the body is plethoric, let blood be drawn, if not, let that be omitted. Let the body, during these eight days, be filled with an emollient aperient decoction, made of the roots of *China*, *Sarzaparilla*, *Dog-grass roots*, &c. To prepare a decoction for poor persons, take the roots of *Bardana*, and *Marsh-mallows* with *Liquorice*, which produce the same effect. Such a decoction is inserted in the *Materia Medica* at this number.

All this being done, let the patient put on his flannel dress, which he is not to take off during six weeks ; let his head be covered warm with a woollen cap, for it is dangerous to expose the head to the cold air during the time of the salivation.

This preparation is sufficient before the patient undergoes the salivation. *Sydenham* * condemned laborious and tedious preparations by cathartics, digerents, baths, &c. previous to a salivation ; for he considered quicksilver as a poison needful for exciting a salivation, which could be more easily endured by a strong sound body than by one debilitated by bleeding and low diet. *Haud dubie satius esse duxerit æquus rerum æstimator, nihil agere, quam, ita satagendo, nocere. Quid quod experientia testatur, nullis evacuationibus, aut alio modo, infirmatos salivationis impetum multo melius sustinere, quam eos, quorum quasi ante prælium incisi sunt nervi :* “ Doubtless, every judicious person would think it better to do nothing at all, than to do mischief by such unseasonable attempts. Besides, it is manifest from experience, that a salivation is better borne by those who have not been debilitated by evacuations, or any other way, than by such as have been weakened before entering upon the course.”

S E C T. MCCCCLXIX.

THEN, every two hours, administer a suitable dose of mercurius dulcis, three times sublimed.

He who is to undergo a cure by salivation, should constantly be kept in warm air, so that the mercury should never be depressed in the Fahrenheit's thermometer

* History of the Venereal Disease, p. 353.

mometer (whose thirty-second degree indicates the point of freezing) beneath sixty degrees; if it should ascend to seventy degrees, it can be easily endured; but if it rises above eighty degrees, which it hardly ever ought, there are but few who can bear this greater degree of heat without anxiety and trouble; from whence the patient's rest is usually disturbed: for though the hotter temperature of air is usually recommended in the time of salivation, still the more easy or difficult bearing of heat is to be attended to, which is found to vary in different men.

Mercury is usually given to women immediately after their menstrual evacuations have done flowing, lest in the troublesome time of a salivation, that periodical monthly flux should happen.

I have made choice of such preparations of mercury as can be commodiously borne by the body, and neither provoke a vomiting nor evacuations by stool. I always abstained from *red precipitate* and *turbith mineral*, because they usually disturb the body vehemently. I have seen these used by some others to robust men, in whom even they quickly brought on a copious salivation, and often a very dangerous one too, which was not easily reduced to its due moderation. It happens, that from taking of such rough medicines, large, and debilitating evacuations by stool often follow, sometimes not without danger.

I have used *white precipitate*, or *mercurius dulcis*, three times sublimed. I have known *calomel* indeed to be recommended, which is *mercurius dulcis* seven times sublimed, and the mercurial *panacea*, which is prepared by fifteen repeated sublimations: but I believe I have observed, that these elaborate preparations may indeed be safely applied, but the price is augmented, and their strength decreased, by this often repeated labour; hence I preferred such as were more efficacious, and which I could at will exhibit in a limited dose without any danger.

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I have therefore used the following prescriptions :

R. *Mercur. præcipit. albi gran. xxx.*
Sacchari alb. puriss. drach. j.
Diu simul trita in mortario vitreo, in xxiv. partes
æquales divisa, exhibe.

R. *Mercur. dulc. ter sublimati gran. LXXXX.*
Sive drach. i β.
Sacchari albi puriss. drach. ij.
Diu simul trita en mortario vitreo, in xxiv. doses
æquales divisa, exhibe.

I gave one of these doses at six o'clock in the morning, at nine, and at twelve ; then at six and nine in the evening.

But lest that a vomiting, a griping, or a diarrhœa should come on, let the patient take a spoonful of the following mixture after every dose.

R. *Aq. still. Cort. Citri Unc. iv.*
Laudan. puri gr. ij.
Misce.

This quantity is sufficient for robust men, but I diminished the dose for younger or weaker persons, or less the quantity of mercury in every dose : for no certainty can be here generally stated ; but it ought to be determined by him who has the cure in hand, and often visits the patient, that he may accurately observe the changes produced from taking these remedies.

To many I only gave three doses the first day ; then, if they bore them easily, I augmented the doses the next day.

Nine grains of mercurius dulcis are, in the *Materia Medica*, accounted a dose ; but, to the best of my knowledge, the celebrated *Boerhaave* never administered such a quantity of this remedy at one dose ;

which every one will easily believe, as it may be read in the text, that a *suitable* dose of *mercurius dulcis* is to be given every two hours, but the word *suitable* is added; from whence it appears, that he had left the quantity of *mercurius dulcis* undetermined: but the diet still remains the same as was recommended in the time of preparation for the salivation.

S E C T. MCCCCLXX.

AS soon as the breath is observed to become foetid, the gums to grow sore and painful, and the teeth to loosen, it is to be attended to whether the salivation should go on, remain in its present state, or be lowered.

In these patients a little fever arises sooner or later after the mercury is taken; it seldom happens on the first day, but sometimes on the second, and oftner on the third, sometimes later; they grow hot, uneasy, thirsty, and feel a troublesome weariness, as if all the strength of the body was gone; then an unusual stench of the breath, very troublesome to the patient, and no less so to the by-standers, follows as a sign of an approaching salivation; and this stench remains during the whole time of the salivation. Those who are accustomed to the cure of the venereal disease doubt not of a future salivation when they, on entering the room, perceive this cadaverous disagreeable smell.

The gums then begin to grow painful, the teeth to loosen and rise in their sockets, the inner parts of the cheeks grow stiff, so that the utterance of speech becomes difficult; then the lips swell, and the whole head is inflated; where the swelled tongue touches the teeth, on either side, it becomes ulcerated, and

sometimes deeply corroded and excessive painful; the inside of the cheeks are deeply ulcerated; and sometimes a violent hæmorrhage flows from them; then succeeds a copious flux of viscid saliva, both night and day, which is excessive foetid.

Thus many and great calamities accompany a mercurial salivation; whence the more prudent practitioners, as soon as the first signs of a commencing salivation declare themselves, are careful to suspend the efficacy of the mercury; or at least to diminish the dose, until they know that the undertaken cure proceeds not with too much impetuosity.

But this can be far more safely done when a salivation is attempted by the internal use of mercury; than if quicksilver be mixed with the blood by friction, as appears from what has been before said; for I am certain of the quantity of mercury which I internally give; but I can by no means be certain of the quantity of crude mercury which introduces itself through the skin, and which sometimes suddenly begins to operate.

As long as it remains a doubt, whether the salivation, already begun, will suddenly increase, a fresh dose of mercury is to be abstained from; if it goes on slowly and moderately, it must be kept up by the mercurial powder or another, administered now and then. If a violent salivation comes on, it is rather to be checked; which matter will be hereafter treated of.

During the time of salivation, a large quantity of mild diluting drink is required, which is usually composed of stoned raisins, pearl barley, and liquorice; to these, when strained, let a third part of pure new milk be added. Many other such-like tisans may be prepared according to the patients fancy or palate.

S E C T. MCCCCCLXXI.

IF lb. iij. or lb. iv. of saliva are discharged every twenty-four hours, it is sufficient.

It plainly appears, that the quantity of saliva discharged is variable according to the difference of age and robustness of body; generally, if the patients spit three or four pints of saliva every twenty-four hours, it is thought sufficient. I have seen some who spit five or six pints without any great loss of their strength. If four pints are daily discharged, an hundred and twenty pints will flow out in the space of thirty days, and more still from one whose salivation is longer continued, and who daily spits a greater quantity. It manifestly appears from hence, that the old humours of the body are discharged by this evacuation, and are not replaced by an equal quantity of new, from the aliment taken in; whence those who have undergone a salivation rise so emaciated and exhausted from this cure that they, for the most part, lose all their plumpness of body: nor can the soft drink, just now recommended, supply that loss when sustained; as the patients, lying in a hot place, generally sweat much, neither do they usually discharge a small quantity of urine. Besides, not unfrequently, some very debilitating evacuations by stool also happen during the time of a salivation.

To speak the truth, the vitiated humours are freed from the poison of the venereal disease, by a salivation, and by the sweating method of cure; more of which will be said hereafter. These humours thus depurated are expelled from the body, and the place is supplied with other new and pure humours, and thus the patient is restored to sound health: but

as more may be lost, than is restored to the body during the time of salivation, it appears, that a prudent medium is required, that the salutary end may be obtained, and that the patient fail not of a cure, after suffering so much.

From these observations appears a fresh reason, why the miserable patients are so unhappily treated, when quacks, the very pestilence of the common people, dare meddle with such cures.

A similar method was recommended to procure longevity; namely, that an almost radical change of humours might be formed in the aged body by dissolvent remedies, afterwards succeeded by an evacuation of these humours, in like manner as the cures performed by the virtue of crude mercury, or by attenuant, drying, or sudorific decoctions: these frequently very well dispose the body for the expulsion of the old, and restoration of the new, vital matter.* Yet it is excellently added, *Unde prudens ars per has ad vitam longam ducit*: “Whence prudent art conduces to long life by virtue of these remedies.” I believe there can be but few found who would be willing to purchase the uncertain expectation of old age at this price.

S E C T. MCCCCLXXII.

IF the flux of the saliva be less, it is to be excited by the same provocative.

Let the number of doses, or the quantity of mercury in every dose, be augmented. It usually very much promotes the increase of the salivation to have the head and neck covered with flannel, yet the salivation or flux must not be over hurried. I was al-

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ways more willing to persist longer in the same quantity of mercury, than to act hastily; for sometimes an immoderate salivation, surpassing expectation, is the consequence, which cannot be moderated by the physician without great difficulty, after the patient has taken a large quantity of mercury.

S E C T. MCCCCLXXIII.

IF the flux should be greater than the patients strength can bear, it is to be checked by mild glysters, purgatives, or sudorifics.

It sometimes may happen, that the mercury begins in a sudden and impetuous manner, particularly if an imprudent or an over-repeated dose of it was given; or if more crude mercury than needful had entered the body by friction; then the head, lips, and tongue, suddenly swell, and all the inside of the mouth; and, as the vessels of these parts are very pervious, a violent and perpetual salivation ensues, so that if it should continue with the same progress, it would so empty the whole body in a short time, that it must be entirely exhausted, the spirits faint, and even death ensue. Being thus cautioned, the patients are advised to drink freely of the ptisan, recommended in Sect 1470, so that its quantity may exceed that of the saliva discharged; let such nutriment as is thin be given, so that it may pass without molestation, and yet be fully nourishing, though scarcely requiring any action of the bowels for its concoction; such as the thick juice of barley, oats, or rye, boiled in veal broth, or milk, in hopes that the strength may be sustained for enduring the impetuosity of a strong salivation.

If these prove insufficient, the salivation is to be diminished as much as possible, by a determination of the humours to some other parts: those, who only used mercury internally, may easily abstain therefrom; those who have experienced the effects of mercurial unctions, must quickly pull off their stockings, breeches, shirt, and sheets, all which have been fouled by the mercurial ointment, and then carefully cleanse their skin, lest the adhering mercury should enter the body and increase the salivation, which is already too profuse.

Cathartics are also recommended for carrying off a part of this peccant matter by stool, and thus relieving the superior parts, which for a long time, both night and day, discharge a constant stream of saliva, whereby the wretched patients are entirely deprived of sleep.

Yet great circumspection is here needful; for it will appear, from what will be said in the following section, that it is not in the least to be wished for, that all the force of the mercury should pass off by stool. Let this matter be tried by a lenient purging glyster, the formula whereof may be seen in the *Materia Medica*. It is known, that this is called a cathartic glyster, which ought to operate by procuring stools, but not by simply expelling the fæces, for it is to be composed of a quadruple quantity of the ingredients which are usually taken inwardly as a cathartic draught; whence the reason is evident why this is called a lenient glyster.

There is another prescription to be taken internally, which contains fifteen grains of *diagridium*, (which is scammony prepared with the fumes of sulphur) and six drachms of the *syrup of roses with sena*, and nothing more; so that it only contains a mild purging virtue.

I would not venture to recommend more powerful cathartics, and much less those which may

create a vomiting. The celebrated *Astruc* * only advised the milder purges to be taken; but afterwards adds, *Imo, si grave periculum immineat cum aqua benedicta Rulandi, seu vino emetico, ad unciam unam & dimidiam*: “ nay, an ounce and “ a half of aqua benedicta Rulandi, or emetic wine “ if the danger should be very threatening.” Who ever should but once see a man lying, in the middle of a salivation, with all the inside of his mouth ulcerated, his lips and cheeks swelled, stiff, and corroded, with his tongue painful, swelled, and corroded at the sides, hanging out of the mouth, must certainly be struck with horror if he should think that perhaps within a few minutes this wretch, after the most terrible sickness, should be seized with a violent vomiting. The celebrated author foresaw this difficulty afterwards, saying, *Verum tamen, propter ob præclusum guttur a tonsillarum tumore vomitio difficilior esse videatur, præstaret, grana aliquot tartari stibiati solubilis, v. g. quinque, in aquæ libris duabus solvere, & partitis haustibus, potanda præbere; si enim fracta, adeoque vomitioni promovendæ impar, deorsum ire perget stibii vis, quæ paulo fortior impetum sursum factura fuisset*: “ But if the vomiting should “ be observed to be more difficult, on account of “ the throat contracted by the tumour of the tonsils, it will be useful to dissolve five grains of “ emetic tartar in two pints of water, and to give “ it to be drank in divided draughts; for the dose “ thus broken is so unequal to the promoting of “ vomiting, that the emetic tartar will act by stool “ which if given in a larger dose would have proved “ a violent emetic.”

But certainly *emetic tartar* diluted, often produces a sickness and vomiting, though it for the most part operates by stool: it is well known, that the stronger purges frequently excite a vomiting when they begin to disturb the body; but one reaches in

* De Morbis Venereis, Lib. IV. Cap. VIII. p. 364, 365.

ing only may do much mischief here, if it be considered, what a miserable state the inside of the mouth, the fauces, and tongue are in, during the salivation. Even in a sound man, in whom these parts are entire, flexible, and moveable, the contents of the stomach are exploded with great impetuosity, and violent strainings. How much is to be feared then when the tongue, tonsils, palate, and fauces are tumefied and grown stiff, lest that any part of the contents of the stomach, expelled by the vomit, should fall into the wind-pipe and endanger suffocation, unless instantly forced out by a very strong cough! What tormenting pain must be suffered, when all these parts, distended and inflamed, are so rudely agitated! What dread of a hæmorrhage, which frequently happens during the time of salivation, whilst all these half-corroded parts are roughly shaken by a vomit or cough! Whence, if I am not mistaken, a vomit is to be avoided during the time of salivation.

Therefore, as great caution was needful, in diminishing too high a salivation by evacuations by stool, an attempt was made to derive the impetuosity, and quantity of humours from the head, and inside of the mouth, by sudorific remedies; for whilst the skin was all over bathed with sweat, it was hoped, that those parts which separate and discharge the saliva would be less strained; and that the excessive torrent of the salivation might be lessened by this method.

In *Boerhaave's Materia Medica*, xxxiv. grains of *Diascordion Sylvii* are recommended as a sudorific for this purpose; but as this composition is not always met with in the apothecaries shops in Germany, I shall say a few words concerning it.

Diascordion, so called from the herb *Scordium*, which is a principal ingredient in this electuary, is described by *Hieronymus Fracastorius*, *Lib. 3. de morbis contagiosis*, cap. 7. and highly extolled for curing

ring of contagious diseases, particularly the plague: he therefore gave his patients a potion, which contained a dram of this electuary; two ounces of the juice of *Lujula*, or wood sorrel; an ounce of the juice of lemons; and an ounce of vinegar; and two scruples *specierum cordial. de gemmis*: but he particularly seems to have attributed all the medicinal power of this draught, for curing the plague, to the *Diascordium*, three fourth-parts of which consist of honey; whence fifteen grains of the other ingredients together were taken in this draught. If I mistake not, this electuary consisted of sixteen ingredients; whence a small share of each was in this draught, and therefore some were more willing to attribute the efficacy of this remedy to the acid juices, rather than to the drachm of *Diascordium*; and there is also some opium, but not a great quantity, in this electuary; but that varied in different places: in some apothecaries shops, a drachm of *Diascordium* contains one third part of a grain of opium, but only one fourth part of a grain in Vienna. This composition is usually to be found almost in every apothecary's shop, but not exactly prepared like that which Fracastorius described.

Franciscus de le Boe Sylvius * composed another *Diascordium* different from the former, for he took many ingredients from it and added new ones; such as *radices angelicæ, folia cardui benedicti, crocum, acaciam, radicem imperatoriæ, nucem moschatam*: the greatest difference consisted in this, that he added no honey to it, which increases the bulk but not the virtues of the remedy, in such-like compositions; for he ordered all the ingredients to be digested in spirit of wine, which he distilled in an alembic over a slow fire; there then remained an extract in the bottom of the vessel, which neither changed nor became corrupted: thus he gave a specimen of the manner

* Prax. Medic. Lib. I. Cap. XLVIII.

manner of compounding such remedies in shops, which contain great virtues in a little compass. It plainly appears, that the proportion of the mixed opium to the rest of the ingredients is increased, as no honey is added to the composition. The proportion of opium to the rest of the ingredients cannot be exactly ascertained in the *Diascordium Sylvii*, as that may vary according to the consistence of the extract at the bottom. *Sylvius* himself determines fifteen grains to be a sufficient dose to operate as a sudorific: twenty grains, as hath been said, are prescribed in Boerhaave's *Materia Medica*. I have seen thirty grains, and more, given without any damage to the patient.

The concentrated virtues of the aromatics, and the aperient quality of the saffron, prove the efficacy of this remedy; it would be of the utmost service if, after the exhibition of a purge, in this case, it could repress, alleviate, or lull the disturbance arising from the operation of the cathartic, and also the extreme sensibility of the internal parts of the mouth, whereby the salivation is usually augmented; and at the same time promote the derivation of the humours to another part, by raising sweat.

S E C T. MCCCCLXXIV.

IF the mercury runs off by stool, opiates and diaphoretics will be needful.

The effect of mercury, whether externally applied by friction, or internally taken, is a dissolution of the humours of the body, and an evacuation of these humours so dissolved, in a copious, foetid saliva discharged by the mouth. But it sometimes happens, that all the mercury runs off by stool, which is not at all to be wished for. A salivation no sooner begins
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in some persons, than a diarrhœa immediately follows: to guard against this, let a spoonful of the opiate medicine, prescribed in Sect. 1469, be taken after every dose of the mercurial preparation, and also be frequently repeated between whiles, if the patient complains of a griping pain or rumbling of the bowels; nor have I ever given another dose of mercury until these complaints subsided: I also diminished the dose of mercury, and gave it at longer intervals, if I observed that the intestines were easily irritated.

But as the mouth grows painful before the salivation begins, I suspected that the painful, inflammatory, ulcerating cause, applied to the internal parts of the mouth, might draw the putrid mass of humours towards these places. Hence the same is to be dreaded from the griping pains, which happen in consequence of the internal use of mercury; and if the whole inside of the mouth should be all over ulcerated during the salivation, how many evils must ensue, if from a like conflux of humours, a salivation should be formed by the intestines! This certainly may be called an intestinal salivation, because it performs the same effect, as I have learned in the following case. A thin lean woman, of thirty-four years of age, asked my advice in regard to some pains, which she had a long time suffered, in the inside of her mouth, and a hoarseness, of which she complained. I found a hole eat through the palate of her mouth, which was large enough to receive the top of a man's little finger. After I had for some days filled this sapless body with water gruel, with an addition of a third part of milk, the pains in her mouth, &c. were diminished, the fauces, before dry, seemed moist, and I attempted to excite a salivation by giving her mercurius dulcis, yet in a small dose only: she was immediately ruffled by a racking pain of the bowels, with a flux by stool, and but slight traces of a salivation appeared;

appeared ; neither did her tongue or lips swell, so that I could every day frequently view the ulcer in the palate of her mouth. I restrained the diarrhoea with opiates ; I evidently saw the margins of the ulcer grow moist, the width of the hole at bottom diminish, the corroded flesh replaced with new, and the whole ulcer tend to a consolidation. Still I went on, with great caution, in the use of the mercurius dulcis, which seemed as yet no way active. But afterwards a salivation suddenly came on : she was seized with a vomiting, and a dysentery, which I suppressed with opium ; I kept up the salivation by supporting her with suitable drink, &c. and thus she was perfectly cured, and for many years after lived sound and robust.

As soon therefore as I perceived the mercury to operate by stool, I gave opiates, and that repeatedly, until the pains of the abdomen and bowels were stopped. Such a prescription is inserted in Boerhaave's *Materia Medica*, where half a grain of opium is ordered to be given every quarter of an hour, until these symptoms subside. *Theriaca Andromachi*, spread upon leather, and applied in form of a plaster to the abdomen, is recommended for that same purpose : but as a free perspiration through the skin is always recommended for the cure of a diarrhoea, (according to *Hippocrates*' words * *cutis raritas, alvi densitas* : " When the skin is moist, the belly is in " a costive state :") hence sudorifics, mixed with opiates, are also recommended in this case. Such a remedy, composed of *Diascordium Sylvii*, of which I have spoken in the preceding section, is to be found in Boerhaave's *Materia Medica*.

* Epidem VI. Charter Tom. IX. p. 433.

S E C T. MCCCCCLXXV.

WHEN the mouth, gums, and the jaws, or internal parts of the fauces, swell too much, or grow very painful, a soft lenient gargle or lotion is to be used, or as in Sect. 1473.

It sometimes happens, especially when a salivation is brought on by mercurial unction, that the mouth, gums, jaws, and tongue, contrary to expectation, are greatly swelled and inflamed, with excruciating pain, so that no slight danger of a suffocation arises from the sudden tumour of these parts. When a salivation is produced by mercurials internally given, this seldom happens; because, as soon as the patients feel a slight itching in the gums, and the teeth begin as it were to be raised, the prudent physician will entirely abstain from the use of the mercury, or give but a small dose only, that he may keep up the present state, as a salivation may ensue in a short time after: for it was before said, that the efficacy of crude mercury can be far more easily reduced to a just medium when internally applied, than when externally rubbed into the body.

If in such a case a strong salivation immediately follows, the swelling of the parts, for the most part, usually subsides, and the danger of suffocation from the excessive size of the tumour is lessened: yet the skilful practitioners are generally full of apprehension when a salivation suddenly arises from a small quantity of crude mercury; for experience hath taught, that the cure of the venereal disease is then less certain, and that the symptoms of the disease oftner return afresh. The same hath been observed

served after a great inflammation of the internal parts of the mouth, together with a plentiful salivation.* Whence it appears, why the more prudent practitioners have always attempted to apply mercury in such a manner that a moderate salivation should follow, as was said in Sect. 1471. The age, sex, and strength of the patient, must always be regarded; but when the diseased person lies in these difficulties, he is immediately to be succoured by perpetually supplying the inside of his mouth with warm decoctions of emollient herbs; for the inflamed and swelled internal parts of the mouth suffer very acute pain from the motions required in gargarising them; besides, a part of the gargarism might fall into the aspera arteria, and suffocate the patient, or at least prove very troublesome to him, if all that fell in should be expelled from the trachæa by a violent fit of coughing; for certainly the inflamed and painful parts must be greatly shaken by a violent cough.

Such herbs are prescribed in Boerhaave's *Materia Medica*, at Sect. 1426, the decoctions whereof may not only be used as above directed, but also be drank, and often injected in the manner of a glyster; for they relax, open, and soften the parts, so as that a more copious salivation may flow.

If some ease follow not immediately, the patient must be bled; and it must be tried whether the quantity and impetuosity of the humours cannot be drawn downwards by stool, that the over-great swellings in the upper parts may abate, as was observed in Sect. 1473. It is indeed to be feared, lest the intestines be greatly injured by this acrid and putrid filth; but nobody will hesitate in choosing the slighter evil in such a doubtful case. If, therefore, the internal parts of the mouth should swell so much that a cathartic cannot be swallowed, a quadruple

* Medical Essays and Observat. Tom. III. p. 327.

ruptle dose of these ingredients should be injected by way of glyster:

These evils sometimes ought not to be ascribed to those who undertake the cure, but to the patients themselves. I had a young man under cure, who was not ignorant of the medical art. I gave him some doses of white precipitate, and the first signs of an approaching salivation readily appeared. I was desirous, as usual, to desist from the farther application of mercury, until I first saw the progress of the salivation. The patient being dissatisfied, and tired with this delay, sent to an apothecary's for five grains of turbith mineral, unknown to me, and immediately swallowed that dose, with a design, as he said, either to cure, or kill himself quickly: having thus done, he opened the windows of the chamber in cold and tempestuous wet winter weather, threatening his nurse with present death if she attempted to stop this unadvised and rash step. I was, in three hours after, hastily called to succour the wretch then at death's door: his head was all over excessively swelled; his eyes were bloodshed, swelled, and starting out of his head; his tongue, livid and swelled, hung out of his mouth; his lips in like manner livid and swelled were inverted; and he also laboured under vast anxiety, so that I never beheld so horrid a spectacle. A neighbouring surgeon quickly bled him until he fainted; I then prescribed a strong purging glyster to be instantly given him, which discharged an incredible quantity of humours; and the swelling of the parts so subsided, that he could in a short time breathe freely and swallow liquids: the salivation copiously flowed the day following, and proceeded happily every day after, until he was cured; yet he languished for some months before he could recover his usual strength.

S E C T. MCCCCLXXVI.

TH E salivation is to be continued until all the symptoms of the venereal disease vanish, which commonly takes up the time of thirty-six days.

The efficacy of crude mercury is evidently observed in the parts affected by the venereal disease, which are visible; for the pustules subside, are dried up, and scale off, or are sometimes carried away by a suppuration; the foul bottoms of the ulcers are cleansed, and grow red; the purple or livid colour of the adjacent skin gradually changes into its natural hue; the nocturnal pains are diminished; the tophi and venereal gummata grow soft, and are diminished in like manner; and the same is sometimes observed in venereal complaints of the bones, particularly if recent, for this felicity is seldom obtained in those of many years standing, as they much longer persist in their attack; the thin spongy bones of the nose and palate often fall; and the lamellæ of the skull, corroded by the virus, are separated from the other parts which are as yet sound; but time is required for perfecting a cure of all these parts. Cases also are sometimes met with, which elude the efficacy of mercury. *Argentum enim vivum, sola vi vitæ ætatum, hoc malum sanat, motu expellit. Ideo & ejus medicata potestas haud valet corrigere Venereum tabum, quando ille figitur in locis, ad quæ actio cordis & articularum vix pertingit. Hinc cariem diploes cranii non sanat; sed, in cellulas ejus osseas, consumto pingui vasas, iners effusus, stagnat. Inde & ossium medullam inquinatam hoc malo vix repurgat. Gonorrhæas, in sola cellulosa penis fabrica hærentes, per quas vix ullus circumeuntium humorum impetus, nunquam sanat; licet*

VOL. XVII. A a Luem,

*Luem, simul dominantem, perfecte eo tempore tollat
 Officula tenerrima, solis tenuibus tecta membranis, ser-
 vare nequit, ne excidant. Sed mala Venerea, quæ la-
 titant in locis, per quæ arteriæ rubræ, flavæ, serosæ
 pellucidæ, cæteræque, per quas liquida cum idonea ve-
 locitate ruunt, argentumque vivum in se admittere pos-
 sunt, atque illud fortiter urgere vitali potestate, per-
 fecte sanari queunt Mercurii virtute. Quæ profecto
 observata proderunt Medico, ne diffidat in his, ne va-
 nus sit in illis :* “ For quicksilver, agitated by the
 “ sole force of life, cures this disorder, and expels
 “ it by motion : yet its medicinal power is not suf-
 “ ficient for correcting the venereal poison, when
 “ fixed in certain places to which the action of the
 “ heart and arteries scarcely reaches ; hence it heal-
 “ not a caries in the diploe of the skull, but stag-
 “ nates unactively in its boney cells, empty from
 “ the consumption of their fat or oily substance
 “ hence it hardly purges the corrupted marrow of
 “ the bones from this disorder thoroughly. It never
 “ heals gonorrheas adhering only in the cellular
 “ fabric of the penis, through which the humours
 “ circulate with scarce any impetuosity : though it
 “ may perfectly cure the Lues, at the same time
 “ predominant in the body, it cannot preserve the
 “ tender spongy little bones, covered only with
 “ thin membranes, from being destroyed : but ve-
 “ nereal complaints which lurk in places through
 “ which the red, yellow, serous, pellucid, and other
 “ arteries are distributed, through which the fluids
 “ circulate with due velocity, and can receive the
 “ mercury, and strongly propel it by the vita-
 “ l powers, can be perfectly cured by its virtue. These
 “ observations, attended to, will prevent physicians
 “ from acting with diffidence in some cases, and
 “ with too much confidence in others.”* Hence it
 evidently appears in what sense this rule is to be un-
 derstood.

* Herm. Boerhaave in Præfat. Aphrodis.

derstood; *pergendum, donec omnia symptomata evanuerint*: “the cure is to be continued until all the symptoms of the disease vanish;” for if any symptoms should remain in places which the efficacy of the mercury has not reached; if carious bones have not been yet separated from the sound, and the patient should under this pretext be continued in the salivation, he would certainly sooner sink under it than be cured. These misfortunes often happen, when quacks, and old women, boasting of the virtues of their nostrums, impudently presume to undertake a cure by salivation.

By what indications therefore does the physician judge when it is proper to stop a salivation? It has been before proved by many observations, that the venereal virus is more easily mixed with viscid, mucous, and particularly pinguious humours, and that it becomes more intricately blended with them. All the pinguious humours are dissolved by the action of the mercury, all the viscid are attenuated, and discharged out of the body through various outlets, together with the virus adhering to them; therefore, when the patient's body is totally emaciated, when the venereal ulcers are cleansed, lessened in size, and when yielding laudable matter they tend to consolidation; then the salivation seems to have performed all that can be expected from it, and therefore the prudent physician will suffer it to decrease gradually until it ceases.

Nec sane actioni Mercurii, in tractanda hac inveterata ægritudine, fas esto, nisi prius, ne gutta quidem intacta, universos corporis humores, qui ullo modo pingues sunt, in aquam redigeris, expuleris de corpore, sicque simul immistum his tabum Venereum ablueris quam perfectissime de corpore affecto. Aliter, si quid restitit, statim ac novi ex alimentis succi, qui semper tunc renascuntur, magis quam olim pingues, perfecte vasa repleverint, ilico novus recrudescit morbus. Unde deducitur, rite non curari malum, nisi palle scat instar

*mortui æger, nisi emacietur prorsus, nisi alimentis inter curandum quam minime pinguibus nutriatur, nisi tam diu protrahatur ipsa curatio, donec antiqui humores omnino de corpore migraverint. Neque ideo uniuscujusque est, fortunato dirigere argentum vivum in felicem exitum :** “ Neither is it right to treat this in-

“ veterate disorder with the action of mercury, un-
 “ less you have first reduced every drop of all the
 “ humours of the body, which contain the least fat,
 “ into water ; you may then expel them, and there-
 “ with effectually cleanse away the venereal poison
 “ intimately mixed with these humours ; otherwise,
 “ if any thing remains, as soon as the new juices of
 “ the aliments, which then are always renewed more
 “ fat than the former, perfectly fill the vessels, the
 “ disease instantly repullulates. Whence it is in-
 “ ferred, that the disorder is not perfectly cured ;
 “ unless the patient grows as pale as a dead corpse,
 “ unless he is emaciated to the last degree ; unless
 “ the aliments, with which he is nourished during
 “ the cure, be no way fat ; unless his cure is con-
 “ tinued until all the old humours have been en-
 “ tirely evacuated from the body. It is not there-
 “ fore the talent of every one, to direct a mercurial
 “ course with success.”

Thus the limits of a salivation may be excellently well defined, and the reason also appears, why thirty-six days have been usually appointed for the course of a salivation. It was said in Sect. 1471, that a discharge of four pints of saliva every twenty-four hours was sufficient ; therefore 144 pints are discharged during the course of the salivation, at the rate of four pints per day, and 108 at the rate of three. But it is certain, that the flux is not so copious in the beginning, and when the salivation verges to an end, but when it is at its height, a much greater quantity of saliva is discharged. I

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† Herm. Boerhaave in Præfat. Aphrodis.

the discharges also by stool, urine, particularly by sweat (for the patient lies in a warm room, and well covered) be computed, it will appear, that all the old humours have migrated from the body, and the venereal virus with them, if the cure turns out successful: there also appears a necessity of feeding the patient with a liquid, thin, antiputrescent diet, no ways fat, during the course of the salivation. Let a decoction of barley, oats, rye, or bread, be given, mixed with a third part of milk; then broths made of white tender flesh meats, from which all the fat must be skimmed, and to which a little orange-juice may be added: these aliments alone commonly come into use, as the internal swelled, painful, and corroded parts of the mouth, cannot bear any others. Let a small quantity of these be given at frequent repetitions, that the strength may be sustained.

S E C T. MCCCCLXXVII.

THEN a gentle dose of mercury is now and then to be taken during thirty-six days more, that the traces of a very gentle spitting may remain.

It may appear wonderful, that the use of mercury should be still recommended for thirty-six days more; though even but moderately taken in lesser doses, or at longer intervals, after the patient has undergone a salivation: it is not here intended to excite a new salivation, but to hold the humours of the body so dissolved, that if any part of the venereal virus still remains, whether circulating with the humours, or adhering to some part or other, it may be washed away from thence by a plentiful quantity of diluting liquids, and the patient be entirely freed from this filthy disease: he must also abstain from

fat and rich diet, from wine and spirituous liquors during all this time : care is also to be taken, that these much-exhausted bodies should not be suddenly filled with nourishment, even of the best kind. An oily substance is contained in even the poorest and least nutritious food. A cow drinks pure water, and feeds only upon grass and vegetables which contain a watery juice, not in the least oily ; yet many pints of milk are twice a day milked from this sound animal, which afford a large quantity of fat butter : hence the prudent physicians dread the use of savoury or rich food after a salivation, and therefore enjoin their patients a severe diet. Tired of these restrictions and their former sufferings, they are often found less obedient than they ought, but their refractoriness is always attended with danger to themselves, and creates their physicians much trouble.

I have oftentimes beheld such calamities ; and, amongst other patients, I had a young man, who, six weeks before, had lain with a woman whom he knew to be infected with the venereal disease : a venereal chancre broke out the day following on the inside of the prepuce, and buboes afterwards arose in the groin, together with an intolerable nocturnal pain in the head, which ceased upon the eruption of a great number of red spots on the forehead ; then he began to complain of a pain in the nose, and a little after, the inside of his mouth grew painful ; fearing then the most terrible complaints, I persuaded him to undergo a salivation. Eleven grains of white precipitate were sufficient to excite and keep up a salivation during the usual period.

I earnestly advised him to observe the rule of diet I prescribed for him, for fear of a relapse : he peevishly laughed at my precaution, and shewed me some empty bottles, out of which he had drank Burgundy wine the night before at supper, with his friends, together with the remainder of a ham of which

he had also eaten; boasting that nothing could be more savoury. In seven weeks after, the filthy spots broke out afresh on his forehead, and his pains, and ulcerations in the inside of his mouth returned again; then by a copious use of the decoction of the *roots of Bardana, China, and Sarsaparilla*, with now and then an hydragogue mercurial purge interposed, together with a restriction to a severe course of diet, the disorder was again cured.

In another similar case, a second salivation was necessary to carry off the symptoms of the venereal disease, for they returned with greater violence than at first: but this patient paid due regard to my advice after this second salivation, for I saw him twelve years after perfectly sound, and blest with a fine wife, and healthy robust children.

For if any part of the old leaven still remains in the body after a salivation, the disease indeed becomes silent and affords a false truce, as long as the vital powers are weak, or until the humours become pinguious, when the symptoms again repul-
lulate.

The cure of the venereal disease is in like manner to be most certainly depended on, if all the ulcers are cicatrized with firm scars, and if no symptoms of the pristine disorder bud out again after a generous way of living, and a number of years have elapsed.

It appears from all that has been hitherto said concerning a salivation, that it but seldom occasions danger of life, if the person who directs the cure is prudent and skilful, and the patient readily conforms to the dictates of his physician; particularly if a salivation is brought on by mercurial remedies internally taken, for we can much better moderate, diminish, or augment their efficacy. I never lost a single patient in a salivation; one only was in very great danger, owing to his own rashness and imprudence, as before appeared.

Physicians in general readily allow, that the cure by salivation is pregnant with very dangerous and tiresome accidents. The celebrated Boerhaave,* who recommends salivation as an efficacious method of curing the venereal disease, advises, that great care is still necessary to recover the patient after a salivation; *Nisi enim curatum jam hominem per mensem unum alterumve a pinguibus arcueris pabulis, atque a putrescentibus facile cobibueris, dolebis frustra, te excruciasse miserum crudeli durissimi remedii tortura; quum fere semper aliquid hæreat, unde sepultus resurgat morbus, novasque vires capiat*: “ unless you confine the man already cured for one month or two
 “ from high living, and restrain him from putrescent aliments, you will in vain grieve to have excruciated the wretch with the cruel tortures of the
 “ most severe and dangerous remedy; as something
 “ commonly always lurks behind, from whence the
 “ seemingly-extinguished disease may repullulate again and gather new force.”

The very acute pains of the corroded tongue, which is sometimes split into deep fissures; the hæmorrhage from the internal corroded parts of the mouth, which often happens when the teeth are rotten, † and sometimes in so great a quantity, that it requires to be repressed with a hot iron; the difficulty of swallowing, which is almost totally obstructed; the quantity of saliva flowing night and day, and which deprives the miserable patients of all sleep; the falling out of the soundest teeth, from whence the patients become toothless in the flower of their age from this disease; the internal parts of the mouth corroded, which sometimes grow to each other, so that the jaws cannot be afterwards moved; the tongue sometimes growing to the gums, or insides of the cheeks: Miseries thus suffered by the excruciated patients, during

* In Præfatione Aphodisiacæ.

† Turner's Siphylis, p. 202.

during the time of the cure, make them often wish for death, that they may be released from so many calamities.

It is indeed true, that these most cruel evils happen generally when unskilful persons preside over the cure, as too often happens in the Lues: it cannot however be denied, that a salivation is the most troublesome method of cure. All the authors who have described the method of administering a salivation throughout its course, may be consulted on this head.

Imagination cannot picture a more horrid, shocking, miserable spectacle, than to behold a great number of patients in the height of a salivation, lying in the extensive wards of an hospital appropriated to the cure of the venereal disease. If any thing was capable of deterring giddy youth from the snares of licentiousness, surely it would be this filthy and dreadful sight.

No wonder therefore that physicians always wished to be able to cure the venereal disease without this filthy salivation. *Johannes Almenar*,* a Spanish physician, whom the celebrated *Astruc* † (not without reason) judges worthy of being numbered amongst the most antient writers on the Gallic disease, indeed used mercurial unctions for curing that disease, but still endeavoured to hinder a salivation from coming on in consequence thereof. These are his words: *In generatione saniei febres & dolores fiunt magis, quam facta sanie; & ideo optimum, & singulare, eo tunc administrare solutivum, ut, antequam humor per os expellatur, deorsum evacuetur; & sic nocumentum in ore evitatur, ut ego sæpius expertus sum; aut, si pustulas, aut plagas ulcerosas, habuerit, ibi attrahentia ponantur, ut humor inde evacuetur, & ab ore divertatur:* “ The pain and fever run higher while putrid
“ matter

* Aphrodisiac. p. 368.

† De Morbis Venereis, Tom. II. Edit. II. p. 614.

“ matter is forming, than when that matter is al-
 “ ready formed; therefore the best and only remedy
 “ in such a case is to administer a solutive purge,
 “ that the humours may be evacuated by stool, be-
 “ fore they are expelled at the mouth, that so the in-
 “ juries annoying the mouth may be avoided; as I
 “ have often experienced; or if the patient should
 “ have pustules, or ulcerous wounds, let drawing
 “ plasters be applied to them, that the humour may
 “ be from thence evacuated, and diverted from the
 “ mouth.” Hence it appears, that the method of
 curing the venereal disease without a salivation, had
 already been used on the first appearance of this dis-
 ease in Europe: many others recommended it af-
 terwards, viz. *Amatus Lusitanus*, so called, *Leonar-
 dus Botallus*, &c. Afterwards this was called the
Montpellier method. The patients were rubbed with
 mercurial ointments, or had various parts of their
 bodies covered with plasters which contained crude
 mercury: others gave various mercurial preparations
 internally. As soon as the breath began to smell
 strong, and the teeth as it were to rise, they instantly
 purged the patient, that an immediate salivation
 might be avoided, and thus endeavoured to discharge
 the humours by stool, which would have otherwise
 flowed out at the mouth. The use of purges was
 persisted in until the patient’s mouth was no more
 painful, foetid, nor hot; then mercury was applied
 afresh to the body, until the signs of an approach-
 ing salivation appeared, which was again prevented
 by purges given the patient. They thus proceeded
 in this method, alternately exciting and checking the
 salivation, until all the symptoms of the Lues va-
 nished. This method was by some called, curing
 the venereal disease *per extinctionem*, because the be-
 ginning salivation was in a manner extinguished by
 repeated purges.

But there is another method of curing the vene-
 real disease by unction, without causing a salivation,
 and

Sect. 1477. The VENEREAL DISEASE. 363

and without giving these purging remedies to check the salivation. The celebrated *Chevalier* * says, he has made use of this method in America; and he entirely condemns a salivation as useless, and even injurious, so that he would always have it carefully avoided: he calls this method *per extinctionem*, “by extinction.” It consists in this, that a smaller quantity of crude mercury is every time rubbed into the skin, than when a salivation is intended to be excited by mercurial frictions: he deduces the utility of these frictions from this cause, that by them a greater quantity of mercury enters the patient’s body, and that no part of it is evacuated from thence either by stool or salivation; for he advises the inside of the patient’s mouth to be carefully inspected every day, and orders the frictions to be immediately abstained from, if the least signs of an approaching salivation appear: and also advises, that these frictions are not to be repeated until all the threatening symptoms of a salivation have first totally disappeared. But as soon as these signs of a future salivation vanish, he recommends the mouth to be rinsed with a decoction of plantain, in every pint of which twelve grains of allum have been dissolved.

He attributes the happiness of the cure particularly to this circumstance, that by this method a greater quantity of crude mercury may be mixed with the humours of the human body, and may for a longer time be moved with them through the vessels; from whence follows a greater dissolution of all the humours, which he believes sufficient for a cure; for he states the following as a practical axiom. *Redde sanguinem & lympham fluidiora, & destruxisti virus*: “Render the blood and lymph more fluid, and you have destroyed the virus.”

Botallus

* Lettres a M. de Jean sur les maladies de St. Domingue, &c.
p. 69, &c.

Botallus treated † young infants, infected with the venereal disease, almost in the same manner: but as remedies are but with great difficulty taken by them, *parcius igitur in iis agendum est, imo quam parcissime, levissimeque, statim desinendo ab illitu, dum leviusculum quidquam ori apparere inceperit*: “ they “ are therefore to be very tenderly treated, and the “ unction must immediately be abstained from, as “ soon as any slight injury begins to appear in the “ mouth.” It is indeed true, that he ordered them to be rendered laxative, by purging their nurses with *sena leaves*, or those of *polypody*, boiled in their victuals: but *Botallus* candidly confesses to have learned the method of curing infants with mercurial ointment, from a woman who had thus cured her own son, hardly two years old, who had been infected by a diseased nurse. The child infected the mother, who now and then suckled him, without the least suspicion of any ill consequences, and she unknowingly infected her husband. The parents were, by the advice of *Botallus*, and his brother, also a physician, cured of the venereal disease with mercurial frictions, nothing however was applied to the child; but some of this mercurial unction was by chance left, which the mother privately saved, and anointed her son with it, unknown to the physician and her husband. *Botallus*, in a few days after, seeing the child both lively and cured, in his mother’s lap, he enquired from whence so great a change in him could have happened? as the husband was present, and might have blamed her for this rash step, she then made no answer; but another time *Botallus*, finding her alone, earnestly enquired what had occasioned the child, who was so wretchedly infected before, to be then so sound. The mother, upon his promise of secrecy, made the following declaration. *Artus, ait, ter ille vi leviter, & diebus alternis, gingivas ubi rubescere*

† Aphrodisiac. p. 887, 888.

bescere conspexi, ab illitionibus quievi; stillavit huic os; sed non multum, neque diu; eumque a conjuge omni industria divertebam, ne, conscius facti, culparet me criminis; verum, divino nutu, non minus prospere infanti cessit, quam nobis ipsis; sic ut omnes firmiter domi valeamus: “ I slightly anointed his joints, says she, “ three times on alternate days, and when I saw his “ gums grow red, I stopped my hand; he spit, “ but not much, nor for any long time; and I was “ very diligent in keeping him away from my husband, lest he should find fault with me if he knew “ what I had done: but the disease, by divine permission, was cured, no less happily in the infant “ than ourselves, so that we are all perfectly “ covered.”

Many physicians were of opinion, that an old confirmed Lues could not be radically extirpated without a salivation, and indeed a severe one.

Yet the celebrated *Astruc*,* who recommends salivation, and believes it to be useful, judged, that it was not absolutely necessary for expelling the venereal disease; from whence he believes, *salivationem medentibus cynosuræ instar esse, unde possint certius colligere, tum quanta Mercurii copia admissa sit, tum quantam vim Mercurius admissus exerat in sanguinem; atque adeo, unde sciant, remedii efficaciam, pro nata morbi natura, aut inveteratione, tutius moderari:* “ that a salivation is as a cynosure, or guiding star, “ to physicians; from whence they can more “ certainly judge in what quantity the mercury is “ admitted into the constitution, and what power that “ admitted mercury exerts in the blood, and so “ know how to moderate the efficacy of the remedy “ more safely, according to the recent or inveterate “ state of the disease.” But it certainly seems hard to expose the diseased to the grievous hardships of a salivation, that a physician may better know the quantity

* De Morbis Venereis, Lib. II. Cap. IX. p. 149.

quantity of mercury admitted into the body, together with its action, as that can be more commodiously determined: for when it is internally administered, I can exactly determine both the weight and quantity thrown into the body; and shall be able to judge its effect from observing the decrease of the symptoms of the Lues. But it is manifested by no experiment, whether the filthy virus of the Lues is most happily expelled by a salivation, as being the most natural way. *Astruc** acknowledges, that it may be expelled by other ways; from whence he says, that if a salivation fails, *opus sit, evacuationes alias quasdam substitui, quasi vicarias, natura quidem, per sudorem, vel urinam, arte vero, per alvum, ut virus qua data porta possit effluere*: “It is necessary to supply the defect thereof by certain other evacua-
 “tions, which are as it were its natural substitutes;
 “either by sweating, urine, or by stool, assisted by
 “art, so that the virus may be discharged at the
 “readiest outlet.” Besides, we certainly know that the foetid stench of a salivation proceeds not from the Lues, but from the quicksilver, even though but once rubbed into the body. The soundest men often suffer a salivation by rubbing others with mercurial unctions, as is too well known.

Hence I began to suspect, that a salivation is not absolutely requisite for curing the venereal disease, or at least but a slight one only. The celebrated *Astruc* † favoured this opinion, by requiring a salivation to be so tempered, and so slight, as only to cause a few ulcers in the mouth. He would even have a salivation to be industriously avoided by a slow and sparing administration of mercury; or if it should appear, it is to be artfully repressed by cathartics, at least in cases where the course of a salivation appears not to be sustained without danger of the patient's life.

But

* De Morbis Venereis, Lib. II. Cap. IX. p. 149.

† Ibidem, p. 150.

But all who have undertaken to cure the venereal disease know, that crude mercury cannot be so easily restrained when it begins to grow active, particularly when applied by way of unction. It before appeared, in Sect. 1473, 1474, that the force of mercury rushes not forth always with impunity by stool, as it is justly to be feared, that the quantity of acrid saliva which corrodes the internal parts of the mouth, may pass through the intestines, and excite similar evils in them. Besides, all men are not in the same manner affected by crude mercury, for a small quantity soon brings on a strong salivation, and keeps it up for a long time in some persons, whilst the same quantity shows no signs of its activity in others, which creates a fresh difficulty again.

I attentively visited the patients, under my care for the venereal disease, several times in a day; I compared their cases with the observations I had formerly made, and so I believe that I have seen the first signs in venereal ulcers, when the crude mercury received into the body, began to become active, though I had as yet observed no signs of an approaching salivation. For when I saw the bottoms of the ulcers grow moist, the sloughs loosen, and the colour of the adjacent skin grow natural; I then endeavoured to preserve this present state longer, by not hastening the salivation by repeated doses of mercury, but rather postponing them; yet I gave no purges: the nocturnal pains began to abate, and the buboes diminished in bulk.

Encouraged by this success, I began to think of some other mercurial remedy, which might certainly be of great efficacy, but yet that could be diluted at will, and so tried in a very small dose.

But as the explanation of the virtue of crude mercury, solely attributed to its gravity and divisibility, was less pleasing to me, and I believed there was some other virtue contained in it, as I have endeavoured to demonstrate by many arguments, in Sect 1467. I
was

was therefore the more induced to make some experiments concerning its efficacy.

I formerly tried many experiments concerning the solutions of metals, in curing of difficult diseases; for I confess, that I hoped for much success from thence: for vegetable and animal particles are, for the most part, all sooner or later subdued by the force of our vessels and viscera, so that they are entirely assimilated to our fluids. Metals always remain, for the most part, unchanged in the body, until they are expelled from thence, for they retain their qualities as long as they continue there. Iron, for example, the most common and salutary metal, is almost constantly found in vegetables and animals: it passes through the vessels of our bodies with our fluids, without any change: hence it is even found in the coal of burnt honey, in the red part of the blood, and in the human calculus, as was mentioned upon another occasion.

But iron, and other metals, are most easily borne by the body, and yet operate efficaciously when they are very much diluted; and in no manner irritate the bowels or intestines, but introduce themselves into the most inward recesses of the body, without causing any troublesome symptom: so iron is naturally drank by us in acid ferrugineous waters, impregnated with iron, dissolved by its menstruum, not as yet perhaps well known, nor hitherto easily imitated.

I have tried some other experiments on divers metals converted by proper menstrua into vitriol, then diluted by a large quantity of water. Can not metals thus be really rendered potable?

The vitriols of metals consist of a diluting water, a dissolvent acid, and the dissolved metal: as long as these three remain intimately mixed, the vitriol is pellucid, which may at will be diluted in any quantity of water; and if even one grain is diluted in an hundred pints of water, a proportionable metallic

lic particle of the vitriol, will adhere to every single drop of the mass, as may be ocularly demonstrated by chemical experiments. If you leave the vitriol dry by exsiccation, it no longer remains pellucid; if the dissolvent acid is forced out from it by a greater degree of heat, a corroded metal remains, which can be no more dissolved by water, and is called ochre.

But whilst these three, the water, the acid, and the metal, are united in the vitriol, there proceeds new virtues from thence which were not in any single one of these, but created by the union of them all.

The vitriol of silver (of itself insipid) acquires a very bitter and acrid taste: if a thin plate of copper is put into pure water, which contains a twentieth part of this vitriol dissolved in it, all the silver becomes insipid as before, for all the bitterness vanishes.

Whilst I considered all these circumstances, I was inspired with a thought of trying the vitriol of mercury, but very much diluted. We all acknowledge the remarkable efficacy of crude mercury, in curing the venereal disease; but I cherished a hope of being perhaps able to cure that disease by such a most efficacious mercurial remedy, without a salivation, which I was greatly desirous of.

I indeed knew, that quicksilver readily dissolves in aqua fortis, and spirit of nitre: aqua regia, and spirit of sea salt, dissolve it more difficultly. But I also knew,* that if one part of quicksilver, and two parts of decrepitated sea salt, finely pounded for a long time, be put together in a cucurbit, or crucible of glass, and digested five or six hours over a strong fire, that the glass, when it cools, being broken, produces solid, dry, sublimated mercury, in the form of vitriol. *Est enim verum vitriolum ar-*

* H. Boerhaave Chemiæ, Tom. II. p. 481. Processu. 195.

genti vivi solidum, siccum, in aëre ipso satis constans.†
Basis hujus vitrioli est argentum vivum purissimum;
altera pars est spiritus salis marini omnium meracis-
simus, qui ulla arte haberi potest, hic forma solida ex-
istens: “ For it is a real, dry, solid, vitriol of quick-
 “ silver, undissolvable in the air itself: the purest
 “ quicksilver is the basis of this vitriol; another
 “ part thereof is the purest spirit of sea salt that can
 “ be procured, free from adulteration, herein exist-
 “ ing in a solid form.” Besides, if quicksilver,
 dissolved in spirit of nitre, is put into a retort,
 and if all the spirit is drawn off even until the mer-
 cury is dry, by distilling the mixture over a sand
 heat, and at last, for two or three hours, raising the
 fire to the first degree; then, in the bottom of the
 retort, is found quicksilver in the form of a so-
 lid mass, of a more lively red colour than scar-
 let: this, in the apothecaries shops, is called red
 precipitate, which hath a remarkable fixibility;
 when on the contrary, the spirit of sea salt becomes
 a half volatile mass with the dissolved quicksilver,
 it is called *sublimated mercury*; and because it no
 sooner touches any animal parts than it corrodes and
 converts them into a dead eschar, it is from hence
 justly termed corrosive.

The known acrimony of this remedy did not de-
 ter me, for being able to dilute the solution at will
 by water, I could begin these experiments, even with
 a thousandth part of a grain, if I was willing. The
 opinion which we read,* and have from the most
 excellent master in physic, certainly added to my
 courage. *Sapor hujus vitrioli terribilis, austerus.*
Granum unum, aquæ uncia dilutum, dat remedium cos-
meticum prudenter usurpantibus. Venenum omnium in-
sectorum cutaneorum, simplici lotura. Si drachma tali
misturæ, syrupo violaceo mitificata, potatur bis, terve
in die, mira præstat in multis morbis incurabilibus. A
prudenter

† H. Boerhaave *Chemiæ*, Tom. II p. 481. *Processu*. 198. p.
 467, 468. * *Ibidem*.

prudenter, a prudente Medico! Abstine, si methodum nescis! “Disagreeable is the taste of this terrible vitriol: one grain of it diluted in an ounce of water, produces a cosmetic remedy, for those who use it prudently. It destroys all cutaneous insects by one simple washing. Let a dram of this solution, mixed in syrup of violets be drank twice or three times a day, for it yields wonderful effects in many incurable diseases; but let it be prudently administered by a skilful physician, and let the ignorant abstain from it.”

Nor did I immediately apply this remedy to the cure of the venereal disease. I first began with the twentieth part of a grain diluted in a pint of pure water; dividing this dose in such a manner that it might be all taken in the space of twenty-four hours by a poor woman of fifty years of age, who for many years had an ulcer in her right leg, much bigger than the palm of a man’s hand, and which daily discharged a quantity of foetid sanies, and was acutely painful, yet there was not the least reason to suspect it proceeded from any venereal cause. I dressed the ulcer, with the *emplastrum diapompholygos* of the shops. I gradually augmented the dose, until she took a quarter of a grain within the space of a day; but, when I augmented the quantity of the sublimate, I also augmented the quantity of water. As soon as I observed the ulcer cleanse, and the discharge grow thick and less foetid, I continued the same dose for some time. When I thought the disorder at a stand, and the cure did not advance, I again added a twentieth part of a grain, and so on, until she at length took half a grain diluted in two pints of water at least, in the twenty-four hours. I ordered a nourishing emollient diet for this patient, who was almost in want of every thing. That I might be certain that the cure could be ascribed to no other remedy but to that alone which I had given her, I only ordered an infusion of elder flowers,

to which a third part of milk was added, to be drank at will by her, and no purgative medicine whatever. The ulcer was in the space of three months cured, and firmly cicatrized, and she enjoyed much better health than before, which may be attributed to better food, and her being released from her former uneasiness of mind; as when cured she was able to follow her usual business, and procure herself the necessaries of life.

Confirmed in the use of this remedy, by some other similar cases, I then began to apply it in curing the venereal disease, and conceived great hopes of success from thence. Still it happened unluckily, that some persons, a long time after having swallowed this remedy, felt a very disagreeable sensation of roughness in the inner parts of the mouth; as I from thence dreaded some mischief, I greatly diminished the quantity of the remedy, but the efficacy thereof decreased proportionably.

I have since seen a vomiting caused by the two first doses, from a large quantity of the corrosive sublimate, dissolved in water; and always after, it created a nausea and sickness, with a sensible heat in the stomach, and the internal parts of the mouth, but without a vomiting: moreover there followed griping pains, evacuations by stool, and borborygmi. But it is to be remarked, that when seven grains of the corrosive sublimate were dissolved in eight ounces of spring water, and that a sick woman took a spoonful of this solution morning and evening, so that the whole quantity was taken in the space of eight days, a salivation ensued in a short time, and then a happy cure of many very bad ulcers.*

As I began by the most minute dose with my patient, and never gave her more than half a grain every twenty-four hours, and that diluted in a far greater quantity of water, the cure was the slower but was attended with no inconvenience.

But whilst I was trying various experiments in expectation that I might be enabled to give my patients such a quantity of corrosive sublimate, and so diluted as not to cause any heat in the mouth, jaws, stomach, or belly, nor irritate the bowels, but still that it should perform an effectual cure, I received a letter from *Ribeira Sanchez*, the empress of Russia's chief physician, a man of great erudition, whom I always held and do hold in great esteem: he in this letter informs me, that an old surgeon, morning and evening, gave an ounce of the following remedy even in the most desperate venereal cases: *R. Mercurii sublimati corrosivi drachmam, spiritus fermentati ex ordeo, vel secale, parati, semel rectificati, uncias centum & viginti*: "One drachm of corrosive sublimate mercury dissolved in one hundred and twenty ounces of proof spirits, distilled from barley or rye." He increased, or diminished the dose according to its subsequent effects; and thus most certainly cured this disease without any ill consequence. It is added, *salivationem sequi pro ratione*: that a salivation of course follows."

I was highly pleased at the communication of this remedy. I from hence learned, that as half a grain of corrosive sublimate was contained in every ounce, that a whole grain might be taken in a natural day, without any injury. But as it is customary amongst chemists to burn spirits of wine over *turbith mineral*, and *red precipitate*, to abate their acrimony, and render them more safe for internal use, I hoped that the like consequence might ensue when the corrosive sublimate was digested and dissolved in so large a quantity of rectified spirit of corn. I therefore applied this remedy; but I immediately gave a pint of the *decoction of marshmallows* after it, or some other emollient decoction, with the addition of some quince-root, on account of its flavour; and sometimes mixed with a third or fourth part of milk. I sometimes added a fourth part of milk to simple

barley-water, or water-gruel, for the like use. The patients easily bore the remedy in this manner, and found not the least ill effects therefrom.

Some others applied spirit of wine in the place of spirit of corn, and with the same effect too, as far as has come to my knowledge.

I have always used this remedy in the proportion directed by *Sanchez*; that is, half a grain of the corrosive sublimate to an ounce of spirit; whence I was surprized to find another proportion recommended in a letter from *Sanchez* to a learned physician of Paris;* which was, that four grains of the corrosive sublimate were to be dissolved in forty-eight ounces of spirit of wine; so that only the twelfth part of a grain was contained in every single ounce. I doubted, whether twenty-four grains might not perhaps be wrote in figures in that letter, and the error have here happened from an obliteration of the first character. I consulted the errata but found not the error there.

It is to be observed, that, according to *Sanchez*, a salivation follows the use of this remedy: when seven grains of corrosive sublimate, dissolved in spring water, were taken in the space of eight days, a salivation came on the fourth day; so that three or four pints of saliva were daily discharged.† It is indeed remarked, that the inner parts of the mouth swelled not so much, neither was the stench of the breath so strong, as it usually is when *calomel* is given to bring on a salivation. But as I earnestly wished to cure this disease without a salivation, I applied a less quantity of the remedy, such as a table spoonful, or half an ounce, morning and evening, that I might avoid it. If the cure proceeded slowly in robust men, or in case of a more inveterate Lues, I, morning and evening, gave six drachms, that
is,

* Le Begue de Presse sur l'usage interne du sublimé corrosif, p. 33.

† Medical Observat. and Inquiries, Tom. II. p. 230.

s, a table spoonful and an half, at each time; then, if the event did not answer my wishes, I gave two whole table spoonfuls morning and evening: I lessened the quantity of this remedy but for young and delicate persons.

As I was now, by repeated experience, certain of the utility of this remedy, and as I plainly foresaw that many years would perhaps elapse before I could finish this fifth volume of commentaries; I was therefore willing to communicate the use of this remedy to several others of the profession, that its utility might be the sooner known. Hence I mentioned it to many physicians in different parts of the world, with whom I held an epistolary correspondence; as well as to those who consulted me concerning other disorders, still reserving for the commentaries the deduction of the reasons which induced me to use corrosive sublimate, to the honour of those by whom I have profited.

This is the reason why many physicians have believed, that the public are indebted to me for the use of this remedy, as but few had before dared to use it, because it was almost every where held in the most absolute contempt and horror.

St. Mark's hospital, in the suburbs of Vienna, was instituted by its pious founders, for curing the poor afflicted with the venereal disease.

This cure was attempted twice in every year by a high salivation, that a radical cure might be effected. The numerous wretches there collected could not lie down during the time of the salivation; for if they began to sleep, in that case, they were carried off by convulsions. Others were seized with a vomiting, spitting of blood, and bloody flux, not without great injury and danger.

At that time a certain mercurial remedy which was very carefully concealed, had been for many years used in that hospital; the administration of this remedy was committed to a man altogether ignorant of

medicine, yet he gloried in this arcanum. When this man died, I at length obtained, that the cure of these poor wretches should be committed to a physician; and the famous *Maximilian Locher* bore that office for many years. When he first exercised his function, he was shock'd at the horrid calamities then reigning there, and consulted me about a certain and milder remedy, for curing that filthy disease, of which he was very anxiously desirous. I recommended a solution of corrosive sublimate, in spirit of corn, once rectified, in the same proportion and dose as before mentioned. He made the first trial of it, May the 1st, 1754, on a hundred and twenty-eight patients, who were then preparing for a salivation; he shewed me all these cured without any salivation.

The method of salivation was for ever after banished from this hospital; and he from the year 1754 to 1762, being eight years, cured 4880 persons, labouring under the venereal disease, with the same remedy. He persisted in the same easy short method until death deprived us of him, (most worthy of longer life) in the year 1768, and still the same practice continues under the direction of his worthy successor.*

But he testifies thus: *Nullus ex vi remedii mortuus, vel gravior, & periculosum, symptoma expertus, est:* “No person died, or experienced the least painful and dangerous symptom in consequence of this remedy.” Besides, this conveniency from thence arises to the hospital, that it is not crouded by a number of patients twice in the year, that is, in spring and autumn; for by means of this medicine those who apply to the hospital for relief for the venereal disease, may be cured at any time.

No

* Vide de his libellum Maximil. Locher. observat. Practic. circa Luem Vener. &c. p. 1—36.

No preparation is here required, unless the patient is full of humours, or has a violent head-ach, then let him be bled or purged.

The patients, after taking this remedy, are kept in a warm room until they sweat; their food consists of the thinnest broths, and milk porridge or water gruel, and white meats, with well baked bread: all fat or salted victuals, together with wine, are forbidden them. The use of small-beer is permitted.

For common drink, barley water, water-gruel, or some other emollient decoction is prepared, to which milk is added for patients of a dry constitution; who are advised to drink plentifully, for so their cure will more happily succeed.

Those who are twice or thrice a day purged by taking this remedy, are soonest restored to health. *Locker* observing this, now and then gave a purge during the time of the cure.

He observed, that this remedy operated in some by stool, in others by urine, and in many by sweat.

In thousands thus cured, he hardly ever saw a salivation caused in one; except in those who had before taken other mercurial remedies. He ceased from the use of this remedy on the first signs of a salivation, ordered the patient to drink plentifully of some emollient decoction, and thus the salivation usually ceased spontaneously: he then returned to the use of the remedy, which he persisted in as long as any symptoms of the venereal disease remained. Many were cured in the space of six weeks: but two or three months were necessary for those in whom the disease had taken deeper root, and had produced deep ulcers in the softer parts of the body.

He observed, that men were sooner cured than women, in whom the disease usually manifests itself more slowly, and therefore is often more difficult of cure. Besides, women are accustomed to reject every kind of remedy, during the time of their menses, and

and very obstinately too, so that their cure is thereby prolonged : yet I am convinced, from repeated experience, that the menstrual evacuation is not disturbed by the use of this remedy.

I am certain, that the use of this remedy, though even continued for a long time, is not injurious ; for I gave a spoonful of it to a young nobleman morning and evening for eighteen months, who had been so badly treated for an ophthalmy, that both the cornea and crystalline humour had become opaque. I only ceased from it when the ophthalmy grew bad again, which being in a short time remedied, I went on again. The cure * was crowned with the desired success. I wrote an account of these matters to the learned *Silvester*, a physician in London, the 3d of May, 1758, and I saw the same young nobleman both sound and hearty this year 1769. I have frequently used this remedy for a long time in eradicating a very inveterate Lues, and never found any injury from its use.

As many of the profession were of opinion, that their gains would be not a little diminished if the old method of salivation should be abolished, they industriously endeavoured to prejudice the world against so wicked an undertaking ; asserting, that men were brought into imminent danger of their lives by giving them a poison, which would sooner or later prove exceedingly injurious, instead of producing a certain cure : thus they depreciated it, and insisted, that fifteen grains of sublimé, taken in the space of thirty days by the patient, were sufficient to kill three sound strong men : from whence they concluded, that a third part of the patient's life must absolutely be destroyed by the rash and daring use of such a remedy. I have in some books read this extraordinary argument, and have known it canvassed in public

* Le Begue de Presse sur l'usage interne du sublime corrosif, p. 11.

public physical disputations. Attempts were also made to deny the truth of the facts.

Three hundred soldiers were sent to the hospital of St. Mark, to be cured of the venereal disease: six of these were rejected by *Locker*, the physician, as incurable; for having often been infected, they had almost all the larger bones of their bodies carious; but they with tears and supplications implored him not to deny them this last trial: so they were admitted with the rest.

These poor wretches hardly found any relief, but all the rest departed sound from the hospital.

In a little time afterwards, a letter was sent to me from the council of war, wherein the physician of the hospital was accused of dismissing three hundred soldiers not only uncured from the hospital, but even in a far worse condition than when they entered it.

The physician immediately brought me the daily list of the patients, wherein I found the names of the soldiers, the companies, and regiments they belonged to, together with the days they entered, and the time they left the hospital, all carefully minuted down. By good fortune all these soldiers were still within the district of Vienna. The physician insisted on a strict examination of the matter, by law, nor did I neglect doing it. The delays of the law were spun out under various pretexts, and the calumniator in the mean time ran away, died, and escaped his deserts. *Locker* afterwards quietly continued the cure of the venereal disease in his usual manner.

Those who disliked this method were at full liberty to use another at discretion. The diseased, who thought it impossible that they could ever be safely cured unless they endured the tortures of a salivation, always found some persons very ready to acquiesce with their way of thinking.

I was always glad when any person was convinced of his error, by following the method which I believed

lieved to be the best : still I was cautious, that nobody should follow it through restraint. I despised those who remained obstinate for the sake of filthy gain, and left them to their fate. I under severe penalties forbade quacks the use of the remedy, and expelled those injurious pests of society, when detected, to prevent their deceiving the imprudent, and preying upon mankind. I still exceeded not the quantity of two ounces, or four table spoonfuls per day, in case of a more inveterate Lues ; one spoonful morning and evening is most frequently sufficient ; the cure then perhaps more slowly succeeds, but no other inconveniency is perceived by the patients ; and they can at pleasure so conceal their being under cure for this filthy disease, that no person can have the least suspicion of it. Besides, many of them can follow their accustomed labour, and, in summer time, freely take the air. I always advised them to stay at home in cold, wet, winter weather, while they used this remedy : yet many disobeyed this rule ; for if they were suspected to have been infected with this filthy disease, they went abroad in all weathers. The rich went abroad in coaches, and wrapt up warm in cloaks, or coats lined with skins, which they took off when they entered a warm parlour. But as it is customary to go thus wrapt up to public diversions, their appearance there in such a dress gave no room for suspicion. I have known many persons who, during the time of their cure, have in this manner visited their friends, frequented the court, plays, and other public spectacles, without any injury.

The poorer sort were received into the hospital during the winter season, particularly those who were obliged to work abroad in the cold for their living. A quantity of the remedy, and of the emollient decoction, sufficient to last twenty-four hours, was given to every one else who asked for it.

The soldiers were always permitted to go abroad and sun themselves in mild warm weather: the officers were astonished to see their soldiers do their usual duty, whilst they were taking this remedy for the cure of the venereal disease.*

That celebrated physician general to the British army, *Pringle*, recommended this remedy to the army surgeons, to be tried upon the soldiers in camp afflicted with the venereal disease.† This was accordingly done with as many soldiers so infected as were in need of assistance, especially as no opportunity for a salivation as usual then offered. Twenty such cases are described, and he says, that many more of the like nature could be added. Out of thirty soldiers cured by this method not one suffered a relapse.

Whence it was concluded, *Methodum hanc Luem curandi præferri debere Salivationi, ob brevitatem curæ, ob securitatem & lenitatem, ob corporis habitum post curam finitam*: “ that this method ought to be “ preferred to a salivation, on account of the short- “ ness of the cure, for the safety and mildness of “ it, and on account of the state of the body when “ the cure is finished.” For every body knows how debilitated, exhausted, and severely punished, the miserable patients rise from a salivation, so that they never after recover their former vigour; especially if the salivation is managed by an imprudent, unskilful person.

It was observed in England, that a few were gently purged by it, but only in the beginning of the cure; for this evacuation by stool never exceeds the third or fourth day: the remedy chiefly operated by urine, and brought on a perspiration during the night. Some felt a slight pain about the pit of the stomach after

* Le Begue de Presse sur l'usage interne du sublimé corrosif, p. 60.

† Medic. Observat. and Inquiries, Tom. I. p. 365. Tom. II. p. 73, &c.

after the morning dose, yet that pain increased not in proportion to the dose when augmented: no previous preparation or purging was required for this remedy; and if the patients were feverish, or laboured under any inflammatory symptoms, or a phymosis, they were only bled at first: buboes were happily cured without any other chirurgical assistance; nor was there any need of any other external remedies besides lapis infernalis, for venereal warts, foul ulcers, or fungous excrescences.

But if venereal warts, when obstinate, during the time of the cure be washed with the same solution of sublimate which is internally taken, having been diluted in a quadruple quantity of pure water, these warts all vanish. We read a remarkable instance of this.* A little delicate woman, of twenty-three years of age, being in the fifth month of her pregnancy, had her body from head to foot covered over with venereal eruptions, attended with pain, and a swelling in the glands of the groin. The solution of corrosive sublimate was given her in spirit of wine, so as that she took five-eighths of a grain in twenty-four hours: but she had taken only half that quantity during the first four days of the cure. In fifteen after, these complaints almost wholly disappeared: she however complained of being greatly troubled with the piles; but upon examination was found to have the anus and perineum beset with softish venereal warts, of a whitish colour: several of these were in bigness equal to the top of a man's little finger, and the tops of some seemed to tend to a suppuration.

She was advised to continue the internal use of the solution of sublimate, and also to wash these warts with the same solution diluted in a quadruple quantity of water. In ten days time all the warts disappeared, but had not dropped off, for the larger ones had

* Le Begue de Presse sur l'usage interne du sublimé corrosif.
p. 215.

had left brown spots behind in the skin. As her complaints were no longer troublesome, she was desirous of leaving off the remedy; she nevertheless confessed, that she still had one or two little swellings still remaining: being again examined, two warts like the former appeared on the right labia pudend. which she never had washed. She, according to advice, washed these also, and they, in a few days after, disappeared like the others.

Hence an external application of this remedy appears to be serviceable. I have seen topks, nodes, and exostoses, which had a long time resisted the sole internal use of this remedy, entirely dissolved by an external local application of it, when diluted in a quadruple quantity of water. *Petrus Andreas Matthiolus* * dissolved two ounces of corrosive sublimate in about six pints of rain water, and with this remedy, *egelido omnes corporis compages lavabat, brachiaque, cum tibiis, a genu & a cubito, donec dolores cum cæteris evanescerent*: “made lukewarm, he washed all the joints of the body, together with the arms and shin-bones, from the knee, and from the elbow, until the pains and other symptoms vanished.” But a salivation followed: for he adds, *Diebus lotionis, e cubiculo pedem male affectus non efferat; sed caveat omnia, perinde ac si ingeretur. Huic etiam, quæ præmisimus, accidere solent; oris exulceratio scilicet, defectus animæ, ventris deductio, somni difficultas*: “Let not the patient stir out of his chamber on the days of washing, but let us be as careful in every respect as if he had been rubbed with mercurial unction; for those inconveniences which we have before described usually happen to him also; such as an ulceration of the mouth, a dejection of spirits, a diarrhoea, and restless nights.” But it appears, from what has been said, that no great quantity of the sublimate is required, but that a very little will be sufficient

* Aphrodisiac. p. 257.

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sufficient to prove serviceable by an external use of it.

Hitherto I still kept to the same proportion, that is, half a grain of corrosive sublimate to an ounce of spirits; but I saw * that the quantity of corrosive had been gradually and cautiously increased, until sixteen grains were dissolved in fourteen ounces, or twenty-eight table spoonfuls; and as a spoonful of such a mixture was morning and evening given, there was more than a grain of sublimate daily taken: this indeed succeeded admirably; but a farther augmentation brought on a vomiting; whence it was necessary to return to the first proportion of sixteen grains to fourteen ounces of spirits. Yet it is to be observed, that the use of the remedy in this manner brought on a salivation, though not attended with any inconveniency.

Though it may not at all seem absurd to augment the efficacy of the remedy, I was always careful that the first passages should not be affected, and I always, when I observed a salivation creeping on, guarded against it by abstaining for some days from the use of the remedy, until I saw that all the signs and fear of spitting were gone. In difficult cases I was more willing to augment the quantity of the mixture that was to be taken, than change the proportion of sublimate to the spirit in which it is dissolved; for thereby the danger of a subsequent vomiting will be much less. For those who have the inside of the mouth irritated by taking a greater quantity of the spirit, every dose may be diluted with a draught of the emollient decoction. When this remedy was to be given to young patients, I was careful to dilute it in water, and add some pleasant syrup to it, that they might more easily take it; and I diminished the quantity of sublimate according to their age and strength: so that I sometimes gave only
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* Medic. Observat. and Inquir. Tom. I. p. 403, 404.

the eighth part of a grain, in the space of twenty-four hours.

Therefore, as we ought to be very certain of the quantity of sublimite we give, that method by which a large quantity of corrosive sublimite is dissolved in a small proportion of spirit of corn, or wine, is justly to be rejected; for then this solution is given by drops. We read such a prescription: * *R. Sublimati corrosivi drackmam, alcoholis vini unciam. Fiat solutio.* Ten, twelve, or fifteen of these drops were given in water-gruel, or some other diluting liquor, every morning, and sometimes every evening to the more robust. The dose was gradually augmented until it reached to thirty drops. A bold, and doubtful remedy indeed! But the effects which followed were also very violent; for it strongly operated upwards and downwards: *Sputationem frequenter etiam per horam unam aut alteram excitat; sed æger, finita operatione, res suas prosequitur, neglecta custodia:* it excites a spitting for an hour or two frequently; but when that operation is over, the patient may follow his own affairs." *Turner* tried this method, but in a short time condemned it.† There were other prescriptions, equally rash, then published, but no prudent person ever made use of them. To how many dangers do the wretched expose themselves, when they commit their health to the direction of such as boast of their arcanums! To such destroy the foundations of health, whilst they boast of being able to cure the venereal disease! With grief I have often seen the exhausted patients emaciated with the bloody flux; others with spitting of blood, followed by a galloping consumption, after such rash and dangerous cures; some indeed remained longer in the world, but they never recovered their former health, for they always led a languishing

* *Turner Syphilis on the Venereal Disease, p. 99.*

† *Ibidem, p. 100, & seq.*

guishing miserable life, until they sunk under their burthen in the very flower of their age.

When such dangerous remedies are given by drops, the quantity can with far greater difficulty be ascertained; for the drops are still greater or less in proportion to the mouth of the phial.

But though a solution of sublimate can be borne in a good quantity of spirits, in small doses frequently repeated, even by tender infants; yet it sometimes though rarely happens, that some adult persons cannot bear this remedy. My most intimate friend *Storck*, one of the imperial physicians, declares,* he has observed this in the hospital of Parma, where he cured numbers of this filthy disease, by the use of this remedy, even after a salivation had been tried in vain.

For those who have a husky dry breast, are troubled with a cough, whose nervous system is excessively irritable, and are subject to an hæmorrhage, bear not this remedy without detriment, though they even drink plentifully of some emollient decoction, composed of the softest ingredients.

He confesses that it sometimes happened, that venereal complaints have not for many months yielded to the application of this remedy: he then dissolved twelve grains of *mercurius dulcis* in water, which he sweetened with two ounces of syrup, and gave, four times a day, an ounce of this mixture, with good and speedy effect. Nor did even this remedy relieve other patients; but two grains of red mercurial precipitate, being dissolved in four pints of a decoction saturated with the roots of *Bardana*, were of excellent service; and he by this remedy cured the most obstinate venereal furuncles, which by no means would give way to other remedies.

Thus have I honestly declared all that I know concerning the use of corrosive sublimate, in curing the venereal disease, concealing nothing here. My
end

* *Ann. Medic.* ii. p. 223, & seq.

end was, to avoid the danger and mischiefs of a salivation, and to use as sparing a quantity of crude mercury as possible in the cure of the Lues; for I always had some fear of a quantity of mercury taken into the habit through the skin, as it is an unmanageable body, and an enemy to human nature, as has been already proved by many arguments.

I did not wonder, that many held this facility of a cure in a suspicious light, as it was before so very laborious, nor yet that they believed this disease could ever be so eradicated, unless it was of a slight kind; hence a relapse is always to be feared; but nobody will deny that the Lues has returned even after repeated salivations. The celebrated *Astruc* himself confesses this;* but he at the same time excuses the matter, saying, *Probe gnarus sum, inquit, hydrargyrosin, sine prævia præparatione, dosi nimia, brevioris temporis intervallo, adhibitam, frustra sæpius adhibitam fuisse. At vero pernego, virus ullum unquam esse, quod radicitus non extirpetur, si Mercurius, præmissa debita præparatione, parca manu, legitimis intervallis, tempore satis diuturno, illinatur:* “ I well know that a large dose of crude mercury, applied in a short interval of time without any previous preparation, has been often applied in vain. But I deny that there ever was a virus which it could not radically extirpate, if the mercury after a due preparation be rubbed in sparingly, and at proper intervals, for a sufficient length of time.” For it was before said, that he reposed particular faith in the entrance of a great quantity of mercury into the body. But it is fully convincing, from the words he immediately after subjoins, that he had seen a relapse of the venereal disease, after a salivation had been managed with all necessary care: *Cave tamen, credas, extirpato semel, omnino, omnia jam in vado esse. Si nulla quidem partibus corporis solidis labe illata fuerit prius, res pla-*

C c 2

nissime

* De Morbis Venereis, Edit. II. Tom. II. p. 995.

*nissime confecta erit, sine ullo recidivæ periculo. Secus vero, si quæ supersint solidarum partium vitia, ante in-
usta, utpote, quæ non raro eo usque latenter deducta
sunt, vel partes adeo nobiles obsident, ut nullam jam
curationem, sed palliationem tantum, admittant; imo
plerumque palliationem non satis diuturnam:* “Beware
“of fancying that the danger is safely passed, when
“the virus or seed of the disease seems altogether
“extirpated; for indeed if no prejudice has been first
“done to the solid parts of the body, the cure will
“be most evidently perfected without any danger
“of a relapse. But it happens otherwise, if com-
“plaints before firmly rooted, had remained in any
“of the solid parts of the body; as these evils are
“often latent there, or so attack the noble parts,
“that they only admit of a palliation, but not a cure
“of the disease; even the palliation is for the most
“part of no long duration.” Certainly, as the
bones are often infected by the venereal disease, and
corroded by a filthy caries, these cases must be very
frequent, especially when the contagion adheres to
the solid parts of the body.

The celebrated Astruc * seems to have thought far
otherwise, when he before in extolling the virtues of
crude mercury, and in crying down the efficacy of
guaiacum, wrote as follows: *Quod si quæ vasa in cor-
pore toto impervia superesse possunt; quod quidem ra-
rum est, sed quod tamen de vasis duriorum exostosium,
guminatum, nodorum, &c. interdum verum est; ea
serte tantum, quæ cum momento Mercurii ineluctabilia
sunt, vi nulla alia debiliore unquam in posterum rese-
randa sunt; & quæ proinde pro vasis omnino oblitera-
tis haberi debent, humorque, iisdem impæctus, pro hu-
more nunquam resolubili, & a quo nullum recidivæ pe-
riculum futurum sit:* “If any vessels may be left im-
“pervious in the whole body, which indeed is rare,
“but notwithstanding it is true, that this sometimes
“happens

* De Morbis Venereis, Lib. II. Cap. IX. in prima edit.
p. 142.

happens in the vessels of gummata, nodes, exostoses, and in diseases of the bones; certainly these, which cannot be reached by the force of the mercury, are never to be opened by any weaker power; and which for that cause ought to be esteemed as entirely obliterated vessels, and the humour impacted in them held as a humour never more to be dissolved, and from which no future danger of a relapse is to be feared." I sincerely confess, that I never thought myself secure, if I saw that any thing of this kind remained in the bones after a salivation; nor have I seen any others, who assiduously applied themselves to the curing of this disease, promise an entire cure in such a case, but were always suspicious of a relapse, and used other methods to guard against it.* *Turner*, † formerly famous in curing the venereal disease, candidly acknowledges, that the disease, after a salivation duly carried on for thirty days, has budded out afresh, and required another salivation, though all the attendant symptoms seemed totally cured after the first. Hence he cautiously advises physicians not to be over confident in pronouncing the disease absolutely cured at the hazard of their own reputation.

The cure of the venereal disease by the use of corrosive sublimate, already described, has this particular advantage, that it can without any inconvenience be continued a considerable length of time, and even repeated if the least suspicion should arise of lurking venereal virus in any part of the body: but I have known many who obstinately preferred death to a repeated salivation.

* *Medic. Essays*, Tom. I. p. 57. Tom. III. p. 328.

† *History of the Venereal Disease*, p. 148.

S E C T. MCCCCLXXVIII.

NEITHER is there any other remedy then required for obtaining health.

It is here to be supposed, that all the venereal virus has been totally expelled from the body by the action of the mercury, and that nothing else remains to be done after the salivation, but to fill the patient's body, exhausted by the salivation, with good, mild nourishment, under the restrictions before mentioned.

But it was before said, in Sect. 1476, that venereal cases have happened wherein the efficacy of quicksilver has failed, in whatsoever manner applied. Those who confide in the efficacy of mercury alone, and despise all the rest of the auxiliaries of art, repeat its use until the diseased, exhausted by repeated salivations, die, or they pronounce the disease incurable.

It is worth while to consider what helps still remain in this salutary art, that the wretched patient may be succoured by them.

The celebrated *Freind* †, in treating of the first origin of the venereal disease, gives us the following extract from *Leone*, who wrote the history of Africa, not long after this new disease was brought from America into Europe: *In Barbaria hoc morbo (Lue Venerea) infecti pereunt plerumque, & curantur raro. In Numidia, & Lybia, vix notus est morbus. Unde Barbari, Lue infecti, in Numidiam, Nigritarum regionem, tendunt, & sola aëris temperie, dum morantur ibi, perfectam recuperant salutem, & sani in patriam redeunt, nec Medici auxilio, nec medicamentis, usi. Propriis oculis se plures sic sanatos vidisse, affirmat* “ The

* Histor. of Physic, Vol. II. p. 343.

“ The infected for the most part perish with this
 “ venereal disease in Barbary. This new disease is
 “ hardly known in Numidia and Lybia. From
 “ whence the Barbarians, infected with the Lues,
 “ go to Numidia, and the country of the negroes,
 “ and residing there some time, recover perfect
 “ health by the temperature of the climate only.
 “ They then return sound to their country without
 “ the use of medicines, or aid of a physician.” He
 affirms, that he has personally known many who
 were thus cured. But it is certain, that these men
 lived in an excessive warm climate, nor did they
 probably use any rich food, as they were at the same
 time obliged to seek their food by labour. Moreover,
 the violent exercises performed in the open air, such
 as hunting, racing, climbing up mountains, and
 even the hard labour of rustics, are highly praised
 by *Fracastorius* * in his poem on the venereal disease,
 entitled, *Syphylis*.

*Vidi ego sæpe malum qui jam sudoribus omne
 Finisset, sylvisque Luem liquisset in altis.
 Sed nec turpe puta, dextram summittere aratro,
 Et longum trahere incurvo sub vomere sulcum :
 Neve bidente solum & duras proscindere glebas,
 Et valida aëriam quercum exturbare bipenni,
 Atque imis altam eruere a radicibus ornum.*

But whilst the body is thus exercised by strong
 labour, he strictly recommends every kind of fat
 rich food to be avoided.

— — *tibi pinguis Anas, tibi crudior Anser,
 Vitetur, potiusque vigil Capitolia servet.
 Viteturque gravi Coturnix tarda sagina.
 Tu teneros Laëtes, tu pandæ abdomina Porcæ,
 Porcæ heu terga, fuge, & lumbis ne vescere Aprinis,
 Venatu quamvis toties confeceris Apros.*

* Aphrodisiac. p. 189, 190.

And other much approved authors, who have written of the cure of the venereal disease, recommend low diet and hard labour. So *Gonsalvo Fernandes* * who lived when the disease was brought from America into Europe, and who was afterwards sent to the Spanish settlements, on the continent of South-America, to preside over the gold and silver mines, may be produced as the most wealthy and intelligent eye-witness of this matter, who thus writes in treating of guaiacum wood: *Apud Indos haud est adeo sævum malum, nec tantum affert discrimen, sicut in Hispania, & frigidioribus climatibus; sed parvo negotio, hujus arboris ope, incolæ curantur: Curatio multem inediam, & præterea aquæ potum, in qua lignum hoc decoctum fuerit, expostulat. Et, absque inedia, ipsa nihil prodesse, sed obesse, consuevit:* “ This disease is not so severe among the Indians as in Spain, and other colder climates; but they are cured with little trouble, and the assistance of this tree. The cure requires much abstinence from animal food, together with plentiful draughts of water, in which this wood has been boiled. And it will prove of no service without abstinence, but usually on the contrary does harm.”

This means not an abstinence from every kind of food, but a regimen of weak thin diet: *A carnibus abstinet, & piscibus; sed passulis vescitur, & siccis edulis; iisque paucis (quæ scilicet ad sustentandum tantum corpus sufficiant); & aliquo panis assi (biscoctum vulgus vocat) frustulo:* “ Let the patients abstain from flesh meats, and fish, but raisins and dry foods are to be eaten, but yet sparingly, and only in a manner sufficient to sustain the body, together with some hard baked bread, commonly called biscuit.”

Antonius Musa Brasavolus † displays the efficacy of hard labour in curing the venereal disease thus:

Denique

* *Aphrodisiac.* p. 357.

† *Ibidem,* p. 680.

Denique sunt nonnulli, qui, ex vehementissimo motu, quotidie frequentato, a Gallicis doloribus evasere; ut contigit Dono Batano Campanario, qui sævissimis doloribus cruciabatur, sed, chordas trabendo magnæ campanæ Episcopii Ferrariensis, ab eisdem doloribus evasit:

“ Finally, there are some persons who are freed
“ from the pains of the French disease by daily vi-
“ olent exercise; as it happened to Don Batanus,
“ a bell-founder, who was tormented with most
“ cruel pains of that kind; but he was cured of
“ these pains by ringing the great bell in the cathe-
“ dral of Ferrara.” I have sometimes heard per-
sons, worthy of credit, say, that men, condemned
to the Gallies, were cured of the venereal disease
in the Mediterranean seas, without the application
of any other remedies, than the labour by which they
were daily fatigued, and their scanty poor food, suf-
ficient only to sustain life. The same is confirmed
by *Fallopious*,* who, in defence of the medicinal
virtues of guaiacum wood, in curing the venereal
disease, against those who affirmed that decoctions of
other woods would afford the same effect, writes
thus: *Ego vidi aliquos curatos ligno fagi, qui, coniecti
in triremes, atque, instituta victus ratione tenuissima,
laborantes, ex toto liberantur. Sed iste non est usus
Medicus:* “ I have seen some men who were con-
“ demned to the treble-oared gallies cured by beech
“ wood; for by labouring with it, and keeping to
“ a regimen of the lowest diet, they were freed from
“ the distemper. But this is not a medical practice.”
Did not cruel necessity constrain them, hardly any
patients could be found willing to lead so cala-
mitous a life, to be freed from this filthy disease.

I myself have seen a memorable instance, which
taught me what the constant resolution of the pa-
tient, with a very abstemious way of living, and
constant hard labour, are capable of effecting in an
inveterate, and an almost desperate Lues.

A young

* *Aphrodisiac. p. 790.*

A young gentleman, who was in a most deplorable condition, applied to me for advice. He had undergone four salivations, after each of which the disease, which was thought cured, still broke out afresh. His cure was three times also undertaken by decoctions of guaiacum, but with no better success. He had tumours on the sternum, and clavicles, and a similar one in the forehead; his skin was defiled in various parts by filthy blotches, and he had nocturnal pains in his bones. As he was poor and quite destitute, nobody would receive him or undertake his cure: the poor wretch was abandoned also by all his relations. He confessed, that he had more than once thought of putting an end to his misery by laying violent hands upon himself.

I cheered up his drooping spirits by promising him some relief, but could not venture to insure him an absolute cure of so inveterate a disease. He assured me, that he was willing faithfully to try every thing, and would endure even the very severest hardships, provided they promised the least hopes of a cure. As his constitution was naturally strong, and he then in the prime of life, I placed him with a husbandman, in the station of a servant, without any other wages than his victuals, which were very homely and scanty, though he worked hard; for, besides bread, he was fed only upon carrots, parsnips, and such roots, with other vegetables, mushrooms, apples, pears, barley, oats, and such like, boiled in water only. His drink was the thin sour whey, or butter milk. He began this kind of life in the beginning of April, and resolutely and constantly persisted in his hard rural labours until the beginning of October following, when he met me again perfectly recovered. He strictly abstained from every kind of flesh meats, fish, eggs, milk, butter, and cheese, during the whole time. I saw him some years afterwards, married, and blest with a fair and sound progeny.

A won-

A wonderful example truly ! whence we learn, that the venereal contagion may be purged from many places of the body, to which it has obstinately adhered, and then be expelled from the body by sweat, excited by hard labour in a warm climate, a low diet being used at the same time, and a large quantity of diluting liquids drank, which encourages sweating ; yet persons are hard to be found who could, and yet more rare such as would, endure this method of cure with constancy and resolution.

Hence, when the efficacy of crude mercury failed in curing the venereal disease, physicians had recourse to the use of the decoction of guaiacum, which had acquired great fame, particularly after *Ulricus de Hutten*, a German officer, had publicly testified,* that he was cured by this remedy ; tho' he had unsuccessfully undergone eleven salivations, and the disease was inveterate ; for thus he writes : *Tanto periculo, tam acerbo discrimine, cum hoc morbo nonum jam annum luctor, non segnius interim & alia, quibus obsisti morbo putabatur, aggressus. Nam & balneis curabamur, & herbarum potu, ac potionibus, & erosione ulcerum. Ad quem usum assumebatur arsenicum, atramentum, calcanthum, viride æris, aut aqua quæ fortis vocabatur ; tanta cum doloris acerbitate, ut credi possent nimis vivendi cupidi, qui non mori maluerint, quam sic vitam proferre :* “ In how much danger, in what cruel contention have I struggled for
“ nine years with this disease, which I in the mean
“ resisted not negligently, but I tried every other
“ method that was thought proper for the disease ;
“ for the cure was attempted by baths, by drinks
“ made of herbs, by potions, and by corroding the
“ ulcers ; for which purpose arsenic, ink, vitriol,
“ verdigrease, and aqua-fortis were used. My pains
“ were so severe, that a person who would not rather die than drag out such a life, might be justly
“ thought too fond of living.” He was born, before

* Aphrodisiac p. 381.

fore the venereal disease had as yet appeared in Europe, in the year 1488, and as he died in the year 1523, he laboured under the venereal disease when it first became known, at which time the disorder raged far worse than now, and the cure was more roughly attempted by the unskilful, with ill success, as he himself testifies, that after the frictions *vix centesimus quisque levabatur, recidivis ut plurimum ægris, cum vix paucos ad dies duraret ejus juvamentum* :* “hardly one in a hundred was cured, as the relief the patients received, scarcely lasted longer than a few days.” But how miserably tormented with filthy ulcers, pains, and diseases of the bones, does he describe himself † to have been ; so that he was frightful to be seen or smelt, and loathsome to himself. He was entirely freed from so many shocking complaints, according to his own testimony, by the use of the decoction of guaiacum ; hence he extols and recommends it to every body ; and together with the method of preparing it, describes the necessary regimen to be observed during its use ; all which merit to be read in the works of the author.

It nevertheless has been reported, that *Hutten* relapsed, and died miserably of the venereal disease, before the thirty-fifth or thirty-sixth year of his age. § But it is not in the least wonderful, that a man, who had undergone eleven salivations, and was for nine years afflicted with the most severe venereal symptoms, should be a fugitive, an exile, and sooner end his life than the common course of nature. Nor is it certain, that he died of a relapse, as a free way of living might have been the cause of a fresh complaint, or perhaps he was less cautious, as he firmly believed, he possessed a certain remedy for all venereal diseases. If *Hutten*, as it is said, was the author of the little book, entitled, *Epistolæ obscurorum*

* Aphrodisiac. p. 281.

† Ibidem, p. 304.

§ Astruc de Lue Vener. Edit. 2da p. 630.

scurorum virorum, in which the obscenity of those times is pleasantly touched up, it does not appear, that he can be much praised for his morals.

But the method of preparing and taking the decoction of guaiacum was explained in Sect. 529, in the chapter *de morbis ossium*, and such a decoction is likewise inserted in the *Materia Medica*. The indication is, to fill the body with the decoction of guaiacum. Hence some ounces of a strong decoction of guaiacum, are given four times a day, in a greater or less quantity, according to the age, constitution, and strength of the patient. The patient should continue drinking as much as he can bear, *utique in singulas vices ut minimum uncias sorbeat octo; si plures, tanto rectius*: “until the patient drinks eight ounces at least at every draught; if more, so much the better.”* The patient is to be confined in a very warm room, that he may be almost spontaneously inclined to sweat.

He must abstain from all kinds of meats and liquors which are any way fat; he is only to be nourished with hard-baked bread, such as biscuit, and raisins; nor is he to be indulged with any kind of drink, except a weak decoction of guaiacum. This drink is usually made of the residue of the guaiacum wood, left after preparing the strong decoction; for all the medicinal virtue is not extracted from this wood by one boiling only, and the second decoction is well impregnated with the flavour of the guaiacum, though the wood was boiled in a great quantity of water, and may conveniently serve for common drink.

When physicians first began to use the decoction of guaiacum wood, that drug was sparingly brought from America into Europe; hence it was sold at a dear rate. *Nicolaus Massa* † says, that an ounce of this wood had cost *undecim scutatis aureis*, “eleven

* Herm. Boerhaave in Præfat. Aphrodis.

† Aphrodisiac. p. 71.

“ eleven golden crowns.” Hence the less opulent were the more saving of it, and often boiled the same wood again in fresh water, and so extracted all its medicinal virtue before it was thrown away as useless : yet he testifies, that such decoctions were so efficacious, that a man who had laboured under the French disease for many years, with nocturnal pains, and various humours, was entirely cured by a decoction prepared from one pound of this wood, which he had boiled over and over above twelve times, as long as the decoction retained any of the flavour and scent of the first, which was the strongest of all. *Hutten* * says, that almost five pounds of this wood were necessary to be thus used ; some others said eight, and some ten pounds. But as *Hutten* lived before *Antonius Massa*’s time, perhaps this wood was then bought at a dearer price ; at least it is complained of in the preface of a treatise † concerning the cure of the French disease by guaiacum wood, that much money was required for the cure of the disease with that remedy.

As guaiacum wood can at this time be purchased at an easier rate, it is not preserved for a second or weaker decoction ; but a less quantity of fresh wood is used for the second decoction, so that half an ounce is sufficient for every pound of the decoction which serves for common drink.

Yet it is useful in preparing these decoctions to steep the guaiacum wood for some hours in water, which may serve for the decoction ; for then it becomes more highly impregnated with the medicinal virtue of this wood.

The decoction of guaiacum, particularly that which has all the strength boiled out, has a very pungent flavour, so that it sometimes slightly irritates the inner parts of the mouth : but this inconvenience spontaneously vanishes in a short time after it is drank. This may be guarded against, or at least be remarkably

* Aphrodisiac, p. 285.

† Ibidem, p. 277, 278.

ably diminished, if the root of liquorice is added to the decoction, in such a quantity as to equal half the weight of the guaiacum wood. But the liquorice root is added, which is also called γλυκύς ῥίζα, only when the boiling is finished, and the decoction is poured thereon, and it is infused therein half an hour. For the sweetness of the liquorice is lost by the boiling, particularly if continued for any long time.

These decoctions were therefore drank in a larger quantity after the course of some days; then *ægrati corpus plenum est hoc liquore ligni, cujus penetrabilis acrimonia, & acuta balsamica virtus, talis est, ut omnem fere pituitam solvat, pingue diluat, tenax attenuet, putridum a fracedine ulteriori condiendo præservet, cobibeat. Tum medicatus ille liquor fovit, maceravit, malos humores; restat dein, ut, velocissime motus, perque omnia vasa trajeetus celeriter, intima quæque abluat, detergat, repurget, atque ita pingua corporis infecta de corpore quam accuratissime eliminet, sicque, continuata hac expurgatione, sanet*.* “ the patient’s body is full of this liquor, whose penetrating acrimony, and sharp balsamic virtues are such, that it is capable of dissolving almost all viscidities, of purging gross and fat humours, attenuating what is tenacious, and preventing farther putrefaction. When this medicinal liquor has fomented and macerated the bad humours, it then, by the velocity with which it is speedily conveyed through all the vessels of the body, washes, cleanses, purges, and entirely expels all the fat and gross humours from the most infected parts of the body, and thus a cure is effected by a continuation of this purgation.”

That ultimate intention will be obtained, if the patient’s body is exposed naked to the hot penetrating vapour of burning spirit of wine that he may sweat, by which the liquor drank will be discharged

out

* H. Boerhaave in Præfatione Aphrodisiac.

out of the body, and a fresh opportunity will be given for filling the body with the like decoction. This operation was performed in a two-fold manner: the one method was, in a wooden box made for this purpose, where the patient sat upright with his head out of the box, whilst the spirit of wine was burned under a gridiron, that the vapour of it might every where reach the body. A copious sweat usually followed, which was kept up in this manner for half an hour. The patient was then taken out of the box, and put into a dry warm bed at hand, and left to sweat for an hour, either more or less, according as his strength could bear. But as it would be dangerous if the heated body, all bedewed with sweat, should be exposed to the cold air, many preferred the application of the vapour of burning spirit of wine to the patient's naked body in bed, by a long tube thrust under the bed-cloaths; which may be very conveniently done; for so the removal of the patient from the box is avoided, and there is less danger of the patient's fainting whilst he lies in a horizontal situation, than if he should sit upright in the box. If any part of a bone had been infected by the disease, it was wrapped up in flannel steeped in the strong decoction of guaiacum during the time of the sweat; and the vapour of the spirit of wine was also directed to the part by the tube, that it might particularly act on that part; all which can be most conveniently done when the patient lies in bed. *Hac arte, intima ossium, & reconditissimarum partium abdita, purgantur penitus; etiam, quo mercurii virtus cum efficacia haud pertingebat. Etenim videre memini, juvenem, penitissime ad ossa usque infectum, hac tractatum methodo, tanto impetu ejecisse sudores, ut, in vigore operationis, subviridis a Guaiaco sudor elevaret separaretque ulcerum escharas, vacillantes jam, & inferne labefactatas:†* “ By these means the inmost recesses

† H. Boerhaave in Præfatione Aphrodisiæci.

recesses of the bones are entirely purged, as well as those places which the efficacy of the mercury had not reached; for I remember to have seen a young man, who was infected even to the very bones, treated in this manner, and he sweated so violently, that the sweat in the height of the operation was tinged of a greenish colour, from the guaiacum, which raised and separated the sloughs of ulcers, that were already growing loose and undermined with purulent matter."

The sweat, caused by means of burning spirit of wine, should hardly be continued above half an hour. The spirit being extinguished, and the tube then taken away, let the sweat continue, but more moderately, in bed; which the patient can easily bear for an hour, especially if he take eight or ten ounces of hot, weak, lean veal broth, with a little rice boiled in it. The presence of the physician who directs the cure is necessary during the time of sweating, that he may correct any mistake of the assistants, and speedily succour the patient if he should be seized with a fainting fit, or any other sudden accident. Then let the body be wiped with a warm dry flannel, and then the patient may rise out of bed. Let the sweating be repeated in the evening, with the same precautions and in the same manner; let the strong decoction of guaiacum be also continued to be drank, as also the weak sort for common drink. Let the sweating be repeated twice a day during fourteen days; then once a day only, for fourteen days more, in the morning: that done, the cure is finished. And now let the patient be strengthened, by gradually increasing the quantity of his food, which must be no ways fat; for in the time of the cure, as well as during the time of sweating, a spare regimen of diet, except the lean veal broth, must be observed. *Nicolaus Massa*,† in his time famous

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† Aphrodisiac. p. 71.

for curing the venereal disease, writes thus : *Notandum est, quod infecti, ultima infectione morbi Galli non sanantur nisi fortissimis & ultimis remediis; ut potus dieti decocti, cum tenuissimo victu; scilicet, abstinencia a carnibus, & vino; & ideo, tam in pradio, quam in coena, biscoctum panem ad uncias tres & passularum uncias duas, comedant, modo virtus leret* : “ It is to be remarked, that those who are infected by the French disease, in its utmost violence, are not cured unless by the most powerful and last remedies, such as drinking the said decoction, with the lowest diet; that is, an abstinence from every kind of flesh meats and wine; and therefore, as well at dinner as at supper, let them eat three ounces of biscuit bread, and two ounces of raisins, which will have a good effect.” Moreover *Massa* * gave a very strong decoction of guaiacum; for he mixed two pounds of that wood grossly powdered with sixteen pints of water, which he had steeped the guaiacum a day or two before; then boiled it until one half of the liquor was wasted away: he gave this decoction hot in the morning, from six to twelve ounces, and the same dose in the evening. He ordered his patients in the intermediate time to drink as much of the second decoction as they could.

Yet he in this place advises, that the physician should always attend to the habit and strength of the patient : *Sunt enim homines, non tolerantes famem stomachi aut consuetudinis defectu; quare esto prudens & istis dabis plus de pane, & etiam de carne; ut panis uncias sex panis, & quatuor carnis* : “ for there are men not able to bear hunger, either through weakness of the stomach or from custom; wherefore be prudent, and give them more bread and meat, suppose six ounces of bread and four ounces of meat.” But he seems to have preferred the white meats, such as veal, lamb, kid, and chicken

* Aphrodisiac. p. 62, 63, 64.

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and sometimes permitted them the use of small wild
fowl, but in a small quantity only.

Leonardus Fuchsius, * who practised and taught
medicine in Germany, allowed more food to the pa-
tients who used the decoction of guaiacum for cu-
ring the venereal disease by sweat; for he gave them
from four to six ounces of leavened bread, well baked,
and moderately salted, with a fowl stewed in water :
he advised that no more should be taken at supper
than at dinner; *Imo, si caput defluxionibus idoneum habet*
eger, cœna multo levior, & minor, sit prandio : “ but
“ if the patient is subject to defluxions, let the sup-
“ per be much lighter and much less than the din-
“ ner.” But he remarks, that the Germans have
great appetites, and dress their food much more than
others; hence they require a greater quantity of ali-
ment: wherefore they may eat more freely whilst
they use the decoction of guaiacum; otherwise they,
from that exceeding low diet, together with the
evening sweats and violent pains, which prodigiously
exhaust the strength, would fall into hectic fevers,
and die consumptive.

For as all sudden changes are said to be dange-
rous, and may prove so, this will particularly turn
out true, if any person, a long while accustomed to
high living, should be suddenly put upon very low
diet. From whence *Hutten* reasonably advises, that
those who are to be cured by the decoction of guai-
acum should be gradually deprived of their usual
food, first by a fourth part, then by a third, and a
little after by the half, *ut esurire discat* : “ that the
“ patient may learn to be hungry.” Wine may be
given then also, but greatly diluted with water. †
From whence it appears, how badly patients are treated,
when this difficult treatment is committed to unskilful
persons, which never can be safe, unless administered
by a skilful and prudent physician; for the quantity

D d 2

of

* Aphrodisiac. p. 599, 600.

† Ibidem, p. 284.

of sweat is to be determined according to what the patients can variously bear; Whether it should not be brought on once or twice a day? Whether or not the quantity of food allowed for sustaining the patient's strength is sufficient? Many other occurrences may happen during the time of this cure, which require a physician's presence and aid: for example, in case of the patient's fainting; with respect to the augmenting or diminishing the sweat, heat, &c. *Huttenus* * *noverat quemdam sic medentem, qui tres una die viros agricolas, cum intra hypocaustum plus æquo æstuans conclusisset, ac illi, salutis, quam sic adepturos se sperabant, studio, patientius quam par erat consistarent, donec, defectis per caloris vehementiam cordibus, mori non sentirent, misere jugulavit*: "Hutten knew
 " a certain empiric who undertook this cure, who
 " shut up three husbandmen one day in a room or
 " stove, which was hotter than it should have been:
 " they, in hopes of recovering their health, which
 " they expected to obtain thereby, stood the operation more patiently than needful, until they were
 " suffocated by the heat, and thus miserably perished." A good thermometer should be hung up in the patient's room, which will easily instruct the physician and the by-standers if the place is overheated, or if the heat is not sufficient."

But as this evacuation by sweat becomes so very powerful, and indeed so sudden too, a skilful physician will not attempt this cure upon weak and emaciated bodies: such as have undergone repeated salivations, as are totally exhausted, and almost worn out by a consumption, in vain have recourse to the decoction of guaiacum. For unless a firmness of the bowels still remains, and that they can be recruited again with nourishing food, and their collapsed vessels be filled, so as to augment the corpulence of the dried body a little, they will die in the height of the operation.

Whence

* Aphrodisiac. p. 281.

Whence I have been obliged to recruit, with a nourishing diet, such patients sometimes for two or three months, and longer, before I could venture to attempt a cure by the decoction of guaiacum. If the constitution was not mended after such nourishing food thus for a long time taken, I advised them rather to try another method; of which something will be hereafter said. In the mean time, it is certain, that no firm hope of a cure longer remains in such a case. As the fibres of the intestines and vessels have been weakened by the virulence of the interminate disease, and yet oftener by imprudent methods of cure, and thus the quantity of humours diminished, and the nature of them become so depraved, that the most nutritious aliments cannot be converted into good chyle, or blood, whereby the best strength may be restored; in such case, the wretched patients are often wasted away by an incurable consumption, or a slow fever.

Hence the reason is also understood, why prudent physicians will not provoke a sweat by the vapour of burning spirits of wine, before they have plentifully filled the bodies of their patients with the decoction of guaiacum, during eight days, so that they sometimes begin to swell and are bloated with it. For the penetrating vapour of the spirit of wine, which every where reaches the naked body, creates so great a quantity of sweat, that unless the vessels are first filled with plenty of some fluid, the patients will by such a sudden emptying of the vessels faint, and even incur danger of death.

Therefore, as this method was not free from difficulty and danger, and was less pleasing to many on account of the strict diet and violent sweats attending it, physicians began to consider whether they could not expel the venereal virus from the body by a more commodious method. Thus the celebrated Astruc*

D d 3

relates,

* De Morbis Venereis, Edit. II. Tom. II. p. 844.

relates, that *Alexander Massaria* believed, that the decoction of guaiacum might be administered in the same manner as Bath waters; that is, by drinking it plentifully, even unto ten or twelve pints at intervals, walking about during the time of drinking. He wonders, that this method was thought of by nobody but *Maynard*; *testatur autem, se non semel hoc modo ligni decoctum dedisse, summa cum facilitate, & felicitate*: “for he testifies, that he had more
 “than once given the decoction of guaiacum in
 “this manner, with great ease and success.”

Yet it is certain, that *Antonius Massa*,* who wrote about the same time, had attempted a similar method; for we read the following in his works: *Quoniam non pauci sunt homines, qui in mediam, vel cibi et potus præscriptam abstinentiam, minime ferre possunt, ideo ii non sunt in mediocri cibi quantitate detinendi, sed dantur illis carnes optimæ, & vinum mediocre, ista decoctione dilutum. Etenim plures liberati sunt ex sola permissione decoctionis ligni Indici, tam prima, quam secunda, bibita in prandio, & coena, copiose, seu liberaliter, comedentes etiam optimas carnes, & exeuntes ad propria munia. Sed, qui hac via sanati sunt, non brevi tempore, sed per aliquot menses, usi sunt hac regula. Notandum etiam est, quod infecti ultima infectione morbi Gallici non sanentur nisi ultimis & fortissimis remediis, &c*: “For there are many men who cannot at all
 “bear the prescribed abstinence from meat and
 “drink: they therefore are not to be deprived of a
 “moderate quantity of meat, but let the lightest
 “be given them, together with a reasonable quan-
 “tity of wine diluted in the decoction; for there
 “have been many persons cured by only this mix-
 “ture of the decoction of the Indian wood, as well
 “of the second as first boiling, when plentifully
 “drank at dinner and supper, who also eat the
 “light meats, and went about their necessary busi-
 “ness. However, those who were cured in this
 “manner

* *Aphrodisiac. p. 70, 71.*

“ manner used not this regulation for a short time,
 “ but for many months. But it is to be known,
 “ that those who are infected with the utmost seve-
 “ rity of the French disease will not be cured un-
 “ less by the ultimate and most powerful reme-
 “ dies,” &c.

I have, with infinite delight, seen in the learned, useful, and elaborate works of the celebrated *Morgagni*,* whose erudition, perspicuity, and immense labours are admired by all physicians, and will be the admiration of the latest posterity ; to whose works I, who have learned so much from him, do gratefully acknowledge myself indebted for this method of drinking the decoction of guaiacum, in the same manner as medicinal waters. The celebrated *Valsalva* thought of using this decoction only in the same manner as we usually drink Spaw water. *Dabat primum duas tresve libras, animadvertendo, an facile & per vesicam, non per intestina aut cutim, ut aliquando, redderetur. Nam si non facile, aut si per has duas exiret vias, desistebat. Sin facile, & tantum per urinæ vias, prodiret, postridie pondus, & sic magis magisque indies, augebat ; donec perveniret ad libras decem. Sic multum, citoque, proficiebat ; ut aliquando intra tres, haud amplius, dies vetusta ulcera sanari, gummata deprimi, conspexerit :* “ He first gave the
 “ patient two or three pints of it, observing if it
 “ easily passed by urine, and not by stool or
 “ sweat, as it sometimes did ; for if it did not
 “ sometimes thus readily pass off, or by these two
 “ ways, he stopped his hand. But if it was dis-
 “ charged by urine only, he the day after increased
 “ the quantity until it amounted to ten pints ; thus
 “ it soon became so very efficacious, that he some-
 “ times saw the old ulcers healed in three days, and
 “ all the gummata subside.” *Morgagni* witnesses to have used this same method with good success ; for

D d 4

he

* *De sedibus & causis Morborum per Anatomiam indagatis,*
 Tom. II. p. 370, 371.

he saw a woman, who had been plagued with venereal ulcers for two years, cured with it. She had a large one on either knee, and three or four small ones corroded the palate of her mouth, so that the food she attempted to swallow came mostly out at her nostrils. He also knew a man, who had the hypogastric region and thighs filthily ulcerated by the venereal disease, successfully cured by the same method. From whence he proves, that those greatly err who have supposed, on account of the celerity with which mineral waters, drank in large quantities, pass off, some passages whereby they get to the bladder without entering the circulation; for unless the decoction of guaiacum was received into the blood, and had been with it circulated through the vessels so as to have washed all parts of the body, venereal ulcers, so distantly situated from each other in various parts of the body, could not have been so soon and happily cured.

It is easily understood, that when this decoction of guaiacum is drank in the same way as mineral waters, to about ten pints; it cannot be so strong as that which is used for curing the venereal disease by sweating; which is so saturated, that it much irritates, nay, slightly inflames, the inward parts of the mouth sometimes, particularly in the beginning of the cure; but the patients grow more accustomed to it, and bear it more easily afterwards. Care may however be taken to add liquorice root to the decoction, when taken off the fire, as I have before said; or if the patients eat a fig before and after they take the decoction, the inward parts of their mouths will be far less irritated, being defended by its mucilaginous juice.

The decoction of guaiacum may therefore be taken in a two-fold manner; for the body is filled with this decoction and emptied by strong sweats, brought on by the heat of the place, and the vapour of burnt spirit of wine, together with a severe course of low diet.

diet, void of all fat; for in this cure *artificium consistit in eo, ut rursus omnia pingua resolvantur, corpusque ita emacietur, nihil ut olei retineat; unde hanc exsiccationis curam vocant*.* “the whole artifice consists in entirely dissolving all the fat or gross humours, so that the body may be emaciated to such a degree as to retain no oily particles; from whence this is called the cure by exsiccation:” then there are hopes of expelling the adherent venereal virus, together with all that is fat from the body. The other manner of using this decoction of guaiacum is, to drink a great quantity of it, prepared much weaker, in the same manner as mineral waters, that it may pass by urine, and wash away the venereal contagion from the body. As manifest traces of this method may be still found amongst those authors who, about the time of the first appearance of this disease in Europe, wrote concerning its cure, and as the utility of this method stands confirmed by the unexceptionable testimonies of these yet greater men *Valsalva* and *Morgagni*; it seems well worth the notice and trial of others; for it is by far less injurious than the dry cure, which requires so severe a course of diet, that it disgusts almost every one; neither is the body undoubtedly so debilitated here.

It was before said, in the preceding section, that the quantity of urine was increased by day, and the cutaneous discharge by night, after the use of the decoction of guaiacum for the cure of the venereal disease; and that it operated in some others by stool: from whence it appears, that the venereal virus is to be expelled thro’ various ways from the body. But *Valsalva* abstained from the use of the decoction of guaiacum in the same manner as mineral waters, unless it solely operated by the urinary passages. Perhaps a gentle sweat or purging would not prove very prejudicial, provided the greatest part of the decoction

* Aphrodisiac. in Prefatione.

decoction was evacuated by urine. But this is only a conjecture; and as so quick and safe a cure was effected by this method, it seems best rather to insist upon its operation by urine, when this method is tried. But the celebrated *Boerhaave** gave the following advice concerning the use of crude mercury, and the decoction of guaiacum, in the cure of the venereal disease: *Quum ad summa hæcce mala, ut plurimum, ptyalismus, & hæc decoctionum methodus, soleat adhiberi, semper observanti constitit, ptyalismo feliciter sudoris expulsionem succedere; sed, quoties Guaiaci liquore humores corporis penitissime prius dissoluti fuerant, ut ad hanc curationem desideratur, tum salivatio, postea mercurio excitanda, præscripta vix boni quid præstitit; quin imo, vel maxima datus copia, aut per frictiones corpori applicatus, nihil quidquam salivationis excitavit. Credidi inde, postquam illud aliquoties videram, argentum vivum in attenuatos penitus humores nihil fere agere, sed sine offensa dilabi, atque iterum exire, vix turbato sanguine:* “When a salivation and this sweating course are used to expel this train of evils, copious sweats are observed usually to break out happily after a salivation: but when the humours of the body are first totally dissolved by the liquor of guaiacum, as often as it is required for this method of cure, then a salivation afterwards by mercury is hardly ever prescribed; because even the greatest quantity, given or applied by frictions to the body, brings on no salivation. I from hence believed, having often seen this, that crude mercury acted very little upon the humours entirely attenuated, but glided through, and passed out of the body without offence, or scarce any disturbance to the blood.”

But a decoction of the roots of *sarsaparilla* has been also taken for the cure of the venereal disease; nay, many physicians have given it such wonderful encomiums,

* Aphrodisiac. in Præfatione. circa finem.

encomiums, that they preferred it to the decoction of guaiacum; and many more judged it not to be an useleſs remedy, though they expected not ſuch great effects from it. *Nardus Antonius Recchi* * affirmed it to be the *ſmilax aspera*, already deſcribed by *Dioſcorides*; whence he ſays, *De forma ejus nihil dicam; quoniam illam affabre deſcripſit Dioſcorides*: “ I ſhall ſay nothing about its form, becauſe Dioſcorides has judiciously deſcribed it.” He has mentioned and deſcribed four kinds of ſarſaparilla, and firmly believed, that the fibrous roots of the *ſmilax aspera* have the ſame virtue which is highly extolled in this American plant. *Mos eſt hominum ita admirari extera, ut nihil putent apud ſe naſci, quod, longius deſectum, in maximo habeatur pretio*: “ It is cuſtomary among men to value foreign commodities ſo highly, that they think they have nothing good at home, becauſe what is brought from far is ſold at a very high rate.” He praiſes the ſudorific virtue of this root, by which pains of the joints, and other parts of the body, are eaſed, and obſtinate and incurable venereal diſorders are vanquiſhed. This plant has a very thick and ſhort root near the ſtalk, from which many other roots, not thicker than goole quills, branch out, and horizontally creep under ground. The druggiſts ſell theſe fibrous roots rolled up in a little ball, and the apothe- caries only uſe theſe; yet I have often ſeen the thick root, from which the ſmaller ones branch, which ſome call the *mother of ſarſaparilla*; but that is not uſed by the apothe- caries, but is kept as a curioſity uſually, as they, for the moſt part, have the ſmaller roots rolled up in a ball, which can be wound off again to a great length.

The outſide of theſe roots is of a brown colour, the inſide white, and they can be eaſily ſplit from end to end, as the apothe- caries uſually do before they

* *Rerum Medicar. novæ Hiſpaniæ Theſaur*, Lib. VIII. p. 288. & ſeq.

they are cut into smaller parts for the decoction, for so the water can better penetrate their inward substance, and extract all their medicinal virtue.

I have very often tasted the roots of sarsaparilla, and found them of a mealy mild flavour. I have made a very strong decoction of them, in which I found an unfavoury mealy taste, as if it were a little saltish. I always found this root perfectly inodorous. I particularly wondered at that, as *Nicolaus Massa* * (who, amongst other authors who have wrote of the venereal disease, merits great reputation) says as follows: *Si quis, masticando, & in ore detinendo, ejus gustum scire voluerit, manifestam amaritudinem, cum aliquali stipticitate, sentiet, & qualitatem gustum offendentem cognoscet; & ideo sileant, qui eam insipidam ex omni parte, & inodoratam, esse dicunt; experientia enim, & sensus, contra eos pugnant*: “ If any
 “ one is willing to know the taste of this root, by
 “ chewing and holding it awhile in the mouth, he
 “ will find a manifest bitterness with something of
 “ of a stipticity in it, and will acknowledge that
 “ the quality of the taste is offensive.” Let those
 “ therefore be silent who say that it is wholly insi-
 “ pid, and affords no odour, for experience and their
 “ own senses contradict them.” He indeed confesses it to have no odour in it when dry, as the root is brought to us; but he affirms, that the decoction, exhales one which is rather unpleasant and disgusting.

Though he extols the decoction of sarsaparilla, for curing the venereal disease, he nevertheless confesses, that its effect cannot be compared to that of the decoction of guaiacum: *verum esse medicinam securitatis, & sine discrimine dari posse*: “ but it is a
 “ very safe medicine, and may be given without
 “ danger;” for it is much weaker. *Siquidem, qui cum hac medicina sanantur, facile ex causa, & non multum post tempus, in eandem ægritudinem revertun-*
 tur :

* Aphrodisiac. p. 81.

tur :* “ Wherefore those who are cured by this medicine easily relapse into the same disease again in a short time.”

Vesalius, who closely examined and perfectly described the sarsaparilla (which the Spaniards call sparta parilla, *i. e.* the humble of manners) sent from the Indies, in his *Epistola de radice Chinæ* †, thus testifies ; *Stipites hos, aut sarmenta, non minus quam Chinam, dicas esse insipida, imò magis omni manifesta qualitate, quæ in ejusmodi medicamentis merito desideratur, quam Chinam, destituta* : “ You may say, that these roots are not less insipid than China root, nay even more so in all the manifest qualities so deservedly looked for in medicines of this kind, than the China root.” For we read in an annexed schedule concerning the roots of sarsaparilla, that a purge being first given, a cup of this decoction, made by boiling an ounce of sarsaparilla in two measures of water, was to be drank warm in the morning, and before supper : the same decoction was given as common drink at dinner and supper, without any restriction with respect to diet. Those who used this decoction were also allowed to appear any where in public : linnen cloths, steeped in this same decoction, were applied to ulcers and pained limbs. The decoction of sarsaparilla was drank in this manner for twenty-four days, then a purging remedy being given, the cure was finished.

Vesalius seems not to have reposed any great confidence in the efficacy of sarsaparilla, for he confesses, that he never had made trial of it ; *quandoquidem, cui ab amicis, divini auxilii vice, hæc sarmenta missa sunt, Guaiaci decocto jam videretur restitutus* ; & *neglectis sarmentis illis, eorum portiones quasdam assumere, ac amicis, ut Indicas has imposturas expendant, transmittere, aliisque medicis proponere, mihi liceat* : “ Forasmuch as the person to whom these

“ roots

* Aphrodisiac. p. 81.

† Ibidem, p. 594.

“ roots were, as a divine assistance, sent from his
 “ friends, was already cured, to all appearance, by
 “ the decoction of guaiacum, whence these roots being
 “ neglected, I have taken some portions of them, and
 “ sent them to my friends, and other physicians, with
 “ a view that this Indian imposture may be thorough-
 “ ly examined, as I think it is my duty so to do.”

Gabriel Fallopius lived almost at the same time that *Vesalius* did, and we have a treatise of his on the French disease; but it is a posthumous work, published by his pupils, who seem to have acknowledged more medicinal virtue in the *sarsaparilla*; and he confesses that he believed it to be the root of the *ebulus*, until a Spaniard brought an entire plant of it to the duke of Florence; he then saw that the root of *smilax aspera* was *sarsaparilla*, which was proved by experience; for as he in *monte sancti Juliani, Pisis*, “ in the mount of St. Julian at Pisa,” had seen the *smilax aspera* growing, he was careful to have the roots of it dug up, which *semper usus fuit loco sarsaparillæ; & per biennium illud, quo ibi fuit, semper felici cum successu plurimos a Lue Gallica liberavit*.* “ he always used instead of the *sarsaparilla*, and with that, constantly for two years, cured many of the French disease very successfully.” Yet he remarks, that the *sarsaparilla* brought from Spain has greater, thicker, and plumper roots; the *smilax aspera* has shorter strings or hairs about the roots, which he believes to happen because the plant growing in a stony soil receives less nutriment. *In reliquis, idem est sapor, idem cortex, eadem medulla, & facultas; imo vivacior in nostra*: “ it is the same in every other respect; has the same rind, the same pith, and the same virtues; nay, our own *smilax aspera* is even the most active.”

But as to the virtues of *sarsaparilla*, it has such as appear hardly possible to reconcile together: *Fido salsæ*

* *Aphrodisiac. p. 804.*

salsæ magis, quam ligno (Guaiaco); imbecillior est certe ligno; habet tamen & ipsa nobiles vires, quibus superat Guaiacum; & est, quod, si post superatum morbum Gallicum restent ulcera, aut Rbagades circa sedem, duplo citius sanat hæc quam lignum Indicum: “ I
“ confide more in sarsaparilla than in guaiacum;
“ it is certainly weaker than that wood, yet it pos-
“ sesses noble virtues, in which it excels the guai-
“ acum; namely, if any ulcers remain after the
“ French disease is vanquished, or if any fissures re-
“ main about the anus, it cures them half as soon
“ again as that Indian wood.” He from hence ap-
pears to have reposed hopes in the sarsaparilla, when the contagion of the venereal disease had been, by more efficacious remedies, chased away in such a manner, as that only some slight reliëts of the disease still remained, always suspicious; which seems to be confirmed by more recent observations. Yet *Fal-
lopius* acknowledges, that if the first trial by the sarsaparilla does not succeed, the second, or third, at least, will be effectual. For he thus says: *Cum ergo in Gallico adsunt ulcera, ad hoc medicamentum confugio, tanquam ad certissimam & tutissimum auxilium; & si non facit prima diæta, facit saltem secunda, vel tertia. Præstans est Guaiacum, tamen ego utor Salsa in levi-
bus. Soleo etiam miscere hæc duo simul;* “ When ul-
“ cers, therefore, attend the French disease, I have
“ recourse to this medicine, as the most certain
“ and safest help; and if it proves not effectual the
“ first time, it will the second, or at least the
“ third. Guaiacum is excellent, yet I use sarsapa-
“ rilla in slighter cases. I also sometimes mix these
“ two together.” This he also describes* in the fol-
lowing chapter; and he adds the guaiacum: First, be-
cause the decoction of sarsaparilla slightly offends the
stomach, and sometimes causes stools: Secondly,
*quando volebat eradicare morbum, & opus erat uti
salsa:* “ When he was desirous of eradicating the
“ disease,

* Aphrodisiac. p. 805.

“disease, it was needful to use sarsaparilla also :” Thirdly, When he had an inveterate Lues to cure, *utrumque sumebat, & lignum, & salsam* ; “he then “used both guaiacum and sarsaparilla.”

This method of adding guaiacum to the decoction of sarsaparilla takes place still : thus the decoction of sarsaparilla, to which a small quantity of guaiacum is added, is given to the infected with the venereal disease in the hospital at Florence, called, *Arcispedale de gl'incurabili* : “The hospital for incurables.” *Fallopious* made his decoctions of an equal quantity of guaiacum and sarsaparilla ; but the celebrated *Targioni Tozzetti* * testifies, that six hundred and fifty pounds of sarsaparilla, and only six pounds of guaiacum wood, are yearly consumed in that hospital. That famous man would rather have a greater quantity of the guaiacum added to the decoction, by which the cure of the venereal disease is attempted in this hospital, at least for the use of those patients who are most severely afflicted with this disease.

And he even shewed the † directors of this hospital how useful it would be to give the decoction of guaiacum only, together with the low diet already prescribed, to patients labouring under an inveterate Lues ; particularly to those whose bones might have been corroded by a caries ; for it is easily conceived, that such a cure is not to be expected from the decoction of sarsaparilla.

The famous *Fordyce* ‡ relates many cases of persons labouring with the venereal disease, who found very remarkable benefit from the use of the decoction of sarsaparilla ; particularly in intolerable nocturnal pains and head-achs proceeding from this disease ;

* *Prima Raccolta di osservazioni Medicne*, p. 157.

† *Ibidem*, p. 158.

‡ *Medical Observations and Inquiries*, Tom. I. p. 149 & seq.

ease, and the decoction was prepared in the following manner: §

R. *Rad. Sarsaparillæ unc. iij. decoque in libris sex aquæ fluviatilis, vase aperto, ad colaturam duarum librarum (civilium nempe, quæ faciunt triginta duas uncias.)* He advises the sarsaparilla to be chosen as fresh as possible, neither worm-eaten nor decayed by the salt water in the passage: he sometimes added a small quantity of liquorice root to this decoction, to mend the taste of it. He ordered the above quantity of decoction to be taken at two or three draughts in twenty-four hours, either hot or cold, as might be most pleasing to the patient's palate. The decoction was prepared fresh every two days, and what remained was kept in a cold cellar. A low diet was also recommended, together with a total abstinence from wine.

He tried the sarsaparilla in powder and decoction upon younger persons; but he could not thus radically extirpate the venereal disease: perhaps because the use of crude mercury had not preceded, or because they were unwilling to use the sarsaparilla a sufficient length of time.

This decoction has been found exceedingly serviceable to those of a lean and phthisicky consumptive constitution, caused by the venereal disease; for it restored the strength, appetite, corpulence, and natural colour.*

He particularly expected much benefit from the use of sarsaparilla, when crude mercury and the decoction of guaiacum had not entirely cured the venereal disease. †

From whence he concludes, that mercury, generally speaking, cures venereal disorders for the most part; and that sarsaparilla cures perhaps those which resist the power of mercury: so that it is probable,

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that

§ Medical Observat. and Inquiries, Tom I. p. 181.

* Ibidem, p. 169.

† Ibidem, p. 171, 172.

that every venereal complaint may be cured by a combination of both these remedies, of which we read an example in the same volume.†

*Storck** also has confirmed the efficacy of the decoction of *sarsaparilla*, in his practical observations, and found its effect sometimes to be far greater than he expected; which he proves by a very wonderful case: A woman, labouring under venereal buboes, applied for assistance to a bagnio-keeper, who, by the application of mercurial unction, dispersed the tumours; but she presently felt a violent pain in the bottom of her belly, which, towards the evening, became extremely excruciating, attended with a high fever, and the paroxysm ended with a copious perspiration. She was not uneasy; for in the morning all the pain vanished, and her pulse was natural. In the afternoon all her complaints returned, and in the same order. She was carried to an hospital, where she concealed the cause of the disease, but when different medicines, and even the *quinquina* itself, could afford her no ease, she spontaneously confessed the origin of the disease. Trial was then made of the decoction of *bardana*, together with a solution of *mercurius dulcis* in water, in such a dose that she might take four grains a day of it; whereby the pains diminished, and the fever became milder in two days. But though she was treated for a fortnight in this same manner, no other change was observed. The corrosive sublimate was then tried; but that caused great heat in the sternum, a dryness of the breast, thirst, and pains of the head; so that it was left off. Mercurial purges were also given, with plentiful draughts of emollient decoctions, but without success, for her strength decreased every day.

She at length took the decoction of *sarsaparilla*, and, on the fourth day after, discharged a great quan-

† Medical Observat. and Inquiries, Tom. I. p. 406.

* Ann. Medic. secund. p. 225, & seq.

quantity of viscous brown matter by urine. On the fifth day, the urine was thin, but an acrid thick foetid brownish matter was discharged from the vagina; the pains, together with the fever, greatly abated; and in a fortnight nothing more came from the vagina; the pains and fever entirely vanished, her strength daily increased, and the woman recovered perfect health. She was advised to use the same decoction, but more diluted, for some weeks longer, that if any morbid matter still lurk'd in the habit, it might be cleansed away.

China root began to be brought into Europe about the year 1535. This was extolled as an incomparable remedy for subduing the venereal disease. As a far less exactness of diet was observed during the whole time of drinking the *China-root* decoction, a moderate use of wine diluted in this decoction was granted to the patients, and the root was sold at a very high price. This remedy soon grew into esteem amongst the more opulent, because that it was also productive of most certain relief in pains or diseases of the joints; for which reason this decoction was drank by the *emperor Charles the Fifth*. It was prepared in the following manner. One ounce of it was shaved into small chips, about the thickness of a man's nail only. These shavings were steeped in a small quantity of water for twenty-four hours, then boiled in twelve pints of water, till a third part of the water was consumed. But the vessel in which this decoction is thus prepared, should be very large, lest any part should overflow in the boiling; it should also be covered close that none of the virtue of it may exhale. When it was strained, the shavings were preserved for other uses. The decoction should be made fresh every day, because, if kept longer, it will grow sour.

A large cup of this decoction was given warm to the patient in bed, at the dawn of day; then being well covered up, he tried to bring on a sweat for two
 E e 2 hours,

hours, for the more the patient sweated the more benefit he received; then being well dried, he arose and dressed himself in warm cloaths, and was careful of catching cold. He drank of the same decoction in the day-time rather warm, but the hotter it was the more beneficial it proved. Chickens and fowls, stewed without salt, were allowed; the patient kept his room until the eighth day, then went abroad warmly cloathed. He was to abstain from all acids and roasted meat for fourteen days. The use of honey was recommended, to prevent costiveness; *Ex quocumque tamen ferculo sumendum modiciter est; constat enim, non minus beneficii accedere a diætæ norma, quam ab aquæ (decocti Chinæ) sumptione:** “yet every dish that comes to table must
 “be but moderately eaten of; for it is manifest,
 “that a spare diet, is not less beneficial than the
 “taking the decoction of the China-root:” nor was any other liquor to be used during the whole time of the cure, which lasted twenty-four days. The use of venery was forbidden during this whole time.

The China-root shavings which had been used in preparing this decoction, were dried, and then taken to the amount of two ounces, and boiled in the same manner as at first in twelve pints of water to a third part: this decoction, after the expiration of the twenty-four days cure, was given to the patient for common drink for eight or ten days more. The ulcers (if any) were fomented with this decoction whilst the patient remained at home; if he went abroad they were covered with some other dressings, and the same decoction was again applied upon his return home. A little roast meat was allowed him after the fourteenth day of the cure. The China-root, which is sold in the shops, is a very thick, protuberant, knotty, woody substance; the outside is light,

* Andr. Vesal. Epist. de radice Chinæ. in Aphrodisiaco, p. 584, 598.

light, and of a brown colour; the inside is almost of a rose colour; it scarcely has any evident taste or smell. I never found it otherwise, though I have often tasted it. *Nicolaus Massa* * is nevertheless angry at those *qui hanc radicem inodoratam dicunt, & scribunt; cum sensus illos redarguat: Ego, inquit, non semel tantum frustum istius radice volui mandere, & dentibus confregi, sed & aliis doctis & sensatis viris ad masticandum dedi (ne forte in proprio sensu deciperer); qui omnes, & ego etiam, affirmant, post masticationem, saporem aliquem amarum sentiri manifestum, & stipticitatem quandam. Similiter post ebullitionem odoravi, & aliis ad olfaciendum dedi; qui mecum omnes odorem aliquem levem percipi affirmant, & cognoscunt, ut ego cognovi, &c:* “ who say and write “ that this root has no smell in it; as their sense “ of smelling contradicts them. I, says he, not “ only broke and chewed a piece of this root many “ times, but also gave it to be chewed by other “ learned men of lively sensations, (lest my own sense “ should be deceived) who all, as well as myself, “ affirmed, that they perceived some manifest bitter “ taste, and something of a stipticity after chewing “ it. I have in like manner smelled it when boiled, “ and caused others to smell the decoction, who, “ with me, affirmed, that they perceived some light “ odour in it, and know as I know,” &c.

It is much to be lamented, and brings dishonour upon the salutary art, that physicians, skilful in their profession, should so much differ in opinion about the qualities of a known remedy, which their senses can determine. *Vesalius*,† who examined the China-root, being then a new remedy and highly extolled, with no indifferent circumspection, and whose virtues the emperor Charles the fifth directed an enquiry into, wrote as follows: *Utrumque Chinam, modo aliqui siccam & lignosam, mastices, ac dentibus conteras,*

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nullo

* Aphrodisiac. p. 86.

† Ibidem, p. 588, 589.

nullo illam sapore præditam affirmare possis ; longeque adhuc minus (quantum in illius, non autem in adjacentium pharmacorum, natura est) odorati quidquam præ se fert ; neque unctuosi quidquam, quod alii in ipsa observasse contendunt, degustanti, aut alias pertractanti, ostendit : “ In whatsoever manner you chew the “ China-root, which is no otherwise than dry and “ woody as you break it between your teeth, you “ cannot affirm it possesses any flavour, and still “ far less (according to the nature of it in the apothecaries shops) is it productive of any smell ; “ neither does it appear any way oily to the taste, “ or as it is otherwise handled, as many others have “ contended to have observed.” He afterwards subjoins a long catalogue of the medicinal virtues which are usually attributed to the decoction of China-root, and finally concludes : *Interim dictus jam antea stupidus sapor, citra omne adstrictionis indicium, in China occurrit, neque, quantumvis simplici aquæ incoquas, alium saporem, quam ex hordeo corticibus non emundato, & minima dulcis radicis portione, consurgere animadvertas, rubescere pariter nonnihil Chinæ decocto, fulvi admodum vini instar, aut ejus, quod ex longa in cantharo mora ruborem contraxit, adeo ut hinc, quod ad manifestas qualitates spectat, vix tantum in sudoris urinæque provocatione, & illis virtutibus, quibus China hodie probatur, ex ipsius decocto, quam ex hordei, sperandum sit :* “ An insipid flavour occurs in China “ root, without the least mark of an astringent “ power, as has been already mentioned. You “ will perceive no other flavour in it, though you “ boil it ever so long in simple water, than what “ proceeds from barley boiled with the hulls on, and “ a very small portion of the sweet root. There is “ something of a reddish cast in the decoction of “ China-root, resembling that of red wine, or the “ redness which is contracted by its being kept a “ long while in a decanter, so that hence from its “ manifest qualities, with respect to the urinary and “ cutaneous

“ cutaneous discharges, and those virtues for which
“ the China-root is at present extolled, there is scarce
“ more to be expected from this new decoction than
“ from barley-water.”

Neither did *Gabriel Fallopius* * attribute much virtue to the China-root, in curing the venereal disease; who otherwise, with great acrimony, carps at *Vesalius* in his *anatomical observations*. He gave a much stronger decoction of this root to his patients; for he boiled two ounces of the root in twelve pints of water until the half was consumed. But though he believed this remedy serviceable in other diseases, he forbids the use of it for curing the venereal distemper; for he testifies that he had tried it three or four times unsuccessfully in this disease: whence he thus says, *Ego usus sum isto medicamento, in infirmitatibus viscerum, in cancris exulceratis, & in lippitudinibus, felici satis successu; sed non in morbo Gallico. Nota tamen, quod ex usu radice illius valde pinguis fiat homo: Reliqua miracula in nostro orbe edere respuit:*

“ I have used this medicine for infirmities of the
“ bowels, ulcerated cancers, sore and bloodshot
“ eyes, with very good success, but with none at
“ all in the French disease. Remark however,
“ that a man grows very fat by the use of this
“ root. The rest of its miraculous virtues in our
“ part of the globe I do not think equally well
“ founded.”

Prosper Alpinus † says he was an eye-witness to that effect whereby the decoction of China-root increases the fat of the body; for the people of Asia esteem it for fattening the women in their seraglios.

Though it may appear from what has been said, that this root is not endowed with such remarkable virtues, yet by reason of the water in which it is copiously diluted, its efficacy merits a place in that

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* Aphrodisiac. p. 803.

† Medicin. Ægypt. III. p. 16, & seq.

class of remedies which are by physicians usually called *sanguinem depurantia*, “purifiers of the blood;” because these without any increased motion of the humours can by attenuating, thinning, and provoking the excretions by urine and sweat, wash away all acrimony from the humours, and so dispose the vessels at the same time, that they may easily transmit the humours. All physicians know, that water alone is an efficacious remedy; to which if a sparing diet be joined, much good may be expected therefrom.

I oftener gave a decoction of the *roots of Bardana* to people of low circumstances, who could have them at an easy price every where; and I have found them as effectual, and even more so than the decoction of China-root.

It appears from very recent observations, that the use of *cicuta*, or hemlock, has been remarkably profitable in venereal cases, which neither a salivation, other mercurial remedies, nor decoctions could any way subdue.

A hard scirrhus tumour, bigger than a man’s fist, arose in the scrotum of a man above forty years of age, after a sudden suppression of a gonorrhea by an astringent injection; yet both testicles were unhurt and sound. He had laboured under this tumour a year and a half, and a salivation and other internal and external remedies had been tried without success.

The *cicuta* was then given him, together with plenty of the decoction of bardana; but though the patient had already taken a whole drachm of the extract of cicuta, on the twentieth day, there was no change observed in the tumour. A drachm and a half was given him on the thirtieth day, the tumour seemed softer on the thirty-third day, and the patient found his health no way affected by the remedy. A mercurial purge was given him on the thirty-sixth day. After the fortieth day he daily took two drachms

drachms of the extract of cicuta, and the tumour grew less.

The patient continued this dose until the fifth month, a gentle mercurial purge being interposed every fourteenth day: then the tumour was totally dissolved, and the man perfectly cured.* A young man, nineteen years of age, had venereal ulcers all over his body, and both his shin-bones deeply corroded with a caries. Antivenereal remedies of every kind were given the poor wretch, which so injured him, that he became greatly debilitated, and emaciated to the last degree. Störck,† doubtful whether these remedies had been administered in a proper dose and with due precaution, tried various others, but to no purpose.

He therefore ordered a trial of the efficacy of cicuta: he took care that the ulcers and carious bones should be covered with linen cloths, wetted in a fomentation of cicuta. The extract of cicuta was internally given, with a large quantity of the decoction of Bardana, and the addition of a third part of milk. This in a few days caused a great change for the better, and the patient's strength increased. About the end of the second month all the sloughs separated, and most of the ulcers were firmly cicatrized, and the nocturnal pains that tormented the patient entirely ceased.

Nor was there need of a very large dose of cicuta, as the highest quantity taken in twenty-four hours exceeded not a drachm. At the end of the third month of the cure, his health appeared perfectly re-established, his pains all vanished, and his strength returned. The remarkable effects of cicuta ‡ are also mentioned elsewhere.

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* Anton. Störck Libel. secund. de Cicuta, p. 169.

† Ibidem, p. 171.

‡ Henr. Jos. Collin Nosocom. Civic. Pazmanniani Anni tertii, p. 131, & seq.

It furthermore appears by the famous *Störck*'s most useful experiments, that the herb *aconite* or monkshood itself has cured this disease. This formerly was an infamous plant, for it was a common saying in every person's mouth,

Lurida terribiles miscent Aconita novercæ.

Linneæus † was surpris'd to see an old woman in Lapland preparing a mess of these herbs (aconites) for her family, which was eaten with impunity: whence *Störck* thought of trying what use this herb might be of in curing inveterate venereal disorders. A woman, forty years of age, had laboured eight years under the venereal disease; she had ulcerated tophs on all the bones of her body, particularly on the sternum; the inner parts of her mouth were ulcerated, and the palate of her mouth much corroded. Every method of cure was tried upon this diseased woman; many of the ulcers were healed, most of the tophs disappeared, but the inner parts of the mouth, and the sternum remained in the same state; nor were her nocturnal pains lessened: whence the patient was reduced to a very feeble condition.

Störck gave her a grain of the extract of *aconite* three times a day, powdered with thirty grains of sugar, and made her drink two large cups of the decoction of the roots of bardana after every dose, of which she had already used a large quantity before.

The nocturnal pains abated in a short time, nay, they even entirely ceased, and all the ulcers seemed changed for the better, her strength and appetite returned, and she moved her limbs more easily.

The nocturnal pains being quieted, the disorder seemed at a stand, nor did the tumours any more diminish, nor were the ulcers consolidated, though he increased the dose of *aconite*, and daily gave her

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† *Floræ Lapponicæ*, p. 179.

six grains of it for five weeks. He then changed his method, and added as many grains of *mercurius dulcis* to the six grains of the extract of aconite, and with three drachms of white sugar mixed the whole into a powder, of which he gave half a drachm three times a day, with a draught of broth or some diluent infusion after each dose.

All the tumours of the bones disappeared in two months and a half by the use of this remedy; some great pieces of the carious bones separated, the ulcers healed, and the lost parts of the *velum pendulum palati*, and *uvula*, grew again; so that she could swallow very well, and speak distinctly. Being now perfectly cured, she returned to her usual labours: whence he concluded, that *extract of aconite* might not only be given with safety and with a salutary effect, but that when conjoined with an equal quantity of *mercurius dulcis*, it is sometimes a more effectual and powerful remedy than any other mercurial preparation.*

Thus have I enumerated many remedies, and the various methods of taking them, which I have known to be serviceable in curing the venereal disease; all these act more or less by evacuation through various passages of the body. Many of these disturb health, and hurt the constitution. I confess, that those remedies which are capable of carrying away the disease, without disturbing the body by their action, have always best pleased me, though they effected the cure more slowly. I have indeed known many cured of the venereal disease by drastic remedies, which operated in a rough manner, and often not without endangering the patient's life; but I have seen more fall into incurable diseases, and others languish out the rest of their days unfit for the usual occupations of life, troublesome to themselves and others. I confess, that I myself have
used

* Anton. Störck Libellus, quo continentur experimenta, &c.
p. 117—123.

used a very rough mercurial remedy (corrosive sublimate) for curing the venereal disease, and recommended a trial thereof to others ; but I gave so sparing a dose, and with such a regimen, that I never saw any injury proceed from it ; for I was always attentive in observing every symptom the least alarming, and immediately lessened the dose, or entirely laid aside the medicine, and tried other remedies, as I have repeatedly said in the preceding sections.

Nor do they attempt the cure of the venereal disease, by any one certain remedy, in America, for many have been tried and recommended. Thus we read,* *Luem Veneream non requirere certum, & specificum, aliquod remedium, quod tota substantia, vel ex occulta aliqua causa, huic morbo medeatur ; cum videamus, plurimas plantas, inter se diversissimas, ab Americanis ad hunc morbum debellandum adhiberi. Quæ tamen omnes in eo conveniunt, ut sint acres, vel amaræ, habeantque vim, vel purgandi, vel diaphoreticam ; ut ab authore nominantur in hoc opere, Convolvuli, Tithymali, Corymbiferae multæ :* “ The venereal disease “ requires no one certain and specific remedy, which “ from its whole substance, or through some occult “ cause, cures this distemper ; as we see many plants, “ very different from each other, are used by the “ Americans for subduing this disease. Yet these “ plants all so far agree, as to be acrid and bitter, “ and have a diaphoretic, or purgative virtue ; whence “ they are in this work, called by the author, “ Convolvuli, Tithymali, and Corymbiferae of various kinds.” *Gonsalvus Fernandez*, † confirms the same thing I have mentioned in this paragraph, who lived when the venereal disease first appeared in Europe, and was afterwards sent into Hispaniola on the continent of America ; for in speaking of the guaiacum wood he thus adds, *Nec solo hoc ligno Indi curantur ;*

* *Rerum Medicar. novæ Hispaniæ Thesaur. Lib. VI. p. 200, in notis.*

† *Aphrodisiac. p. 358.*

curantur; maximi enim sunt herbarii, multarumque plantarum tenent cognitionem, quarum facultates ad hunc aliosque complures profligandos effectus experimento didicere: “Nor are the Indians cured by this wood alone, for they are most excellent herbarists, and have a knowledge of many plants whose power in curing this disease, and effects in removing others, they have learned from experience.”

For, as Sydenham * excellently well observes, *non inventum est immediatum aliquod specificum, cujus ope, sine evacuatione prægressa, Lues debellari queat; neque enim, vel Mercurius, vel Ligna exsiccantia dicta, specificorum titulo sunt donanda, nisi, exemplis in medium allatis, probare quis possit, vel Mercurium absque salivatione, vel Lignorum decoctum nullo subsequente sudore, Luis Venereæ curationem quandoque absolvisse:* “as yet no immediate specific is discovered, whereby it may be cured without any preceding evacuation. For neither mercury, nor the drying woods, are to be accounted specifics, unless it can be proved by examples, that mercury has sometimes cured the venereal disease without a salivation, or a decoction of the woods without a sweat.” The solution of corrosive sublimate mercury cures this disease without a salivation, but not without some evacuation: indeed it but rarely causes a motion to stool, yet it excites sweats, and operates by urine, which has frequently a thick sediment in it; hence this remedy cures not without evacuation. It was before said, that hard labour in a warm air, together with a spare low diet, has sometimes cured the venereal disease; but the copious sweats exhaled under such a cure almost consume the whole juices of the body, to which the venereal contagion adheres, as I have particularly endeavoured to prove in the preceding sections.

Hence

* Epistola Responsoriz secunda, p. 418.

Hence it does at all appear wonderful, that a great number of remedies are to be found, which relieve, and sometimes cure this cruel disease, namely, by evacuation ; though they are for the sake of lucre cried up as secrets, and sold under this title at a great price to the credulous. The honest, generous, and noble-minded physicians, who have the public good at heart, conceal not such useful remedies as come to their knowledge. Hence it is to be hoped, that later times will perhaps teach the use of more and better remedies than those already known.

Thus I have learned from a physician, most worthy of credit, that the root of *lobelia* slowly simmered, or infused in pure water, produces a certain and safe remedy for the venereal disease, and cures it in the space of ten or twenty days at the most. This decoction is drank upon an empty stomach ; a large dose of it brings on a vomiting, a less dose purges, and a smaller still brings on a sweat. The plant is thus described, *Lobelia, caule erecto, foliis ovato lanceolatis, crenatis, floribus lateralibus. Prodom. Floræ Leydensis. Linnæi hort. Cliffort. p. 426. Rapunculus Americanus flore dilute cæruleo, Boerhaave Index plantar. Tom. I. p. 25 :* “ The plant lobelia has a
 “ straight stalk, oval, sharp pointed, and indented
 “ leaves, with flowers on the sides. Prodom. Floræ
 “ Leydensis. Linnæi Hort. Cliffort p. 426. The
 “ American Rapunculus has an azure or light
 “ blue flower. Boerhaave Index plantar. Tom. I.
 “ p. 25.” But this remedy cures also by evacuation.

S E C T. MCCCCLXXIX.

T O P H S are diminished by specific plasters, (1461) or, by scraping the bone when laid bare, having removed the integuments.

What tophs or nodes are was said in Sect. 1456. They, for the most part, yield to the general cure of the venereal disease. It was also said before, that these tophs are very difficultly dissolved. But let the solution of the corrosive sublimate, which is internally taken, be diluted in a quadruple quantity of water, and applied to them in the nature of a fomentation. If they yield not to this application, the bone may justly be supposed carious; wherefore, let all its integuments be cut away, and that cure be had recourse to, which was mentioned in the chapter on the diseases of the bones.





The RICKETS.

S E C T. MCCCCLXXX.

ABOUT the middle of the seventeenth century there arose a new disease in the inland parts of Great Britain, spreading itself from thence through that whole kingdom, and all the northern parts of Europe, called The Rickets; at present a very common distemper.

Glisson, professor of physic in the famous university of Cambridge, the first author who accurately wrote of this disease, testifies, that (by as strict a scrutiny as he could make from the relations of other people) he learned that this disease first became known in the west of England, about thirty years before he wrote his treatise upon it. But as a second edition of this work came out in the year 1650, and the first was published much earlier, the learned *Floyer* * inferred, that this disease had first appeared in England, about the year 1620. *Glisson* testifies,† that this disease afterwards spread all over the

* ψυχροαεσια, or the history of the Cold Bathing, p. 77.

† De Rachitide, p. 3, & seq.

the southern and western parts of England; but this disease occurred very rarely in the northern counties, so that it is scarcely yet known in those places by the common people.

This disease was in England named *the rickets*; but it is uncertain who first gave it that name, or upon what occasion; whether through any certain cause, or advice, it was so called.

Yet it is very likely, as the backbone is by this disease, at least in an advanced state, greatly injured, that it was supposed to be a disorder of the back bone; *νότον τῆς ῥάχews*; and, as the Greek physicians expressed the disease and pain of the sides *πλευρών ἔσπον καὶ πορον* in one word *πλευρίτις*, so in like manner this disease was called *ῥαχίτις*; in which the back-bone is so miserably deformed, and which, in the very beginning of the disease, usually by degrees loses its natural strength, whereby the body should be sustained, particularly in an erect position. This name seems properly applied; because it comprehended some remarkable state of the disease, and was sufficiently different from the names of other symptoms and diseases, was also easy of pronunciation, and readily retained in memory. But it is easily conceived how the Greek word *ῥαχίτις*, by the error of a common pronunciation might be changed into the word *rickets*, which name is to this day in common use in England to denote this disease.

After the *rickets* had fixed its seat in most of the other parts of Europe, where the English language was not natural to the inhabitants, they called it after the country they thought it first appeared in; and thus, for the most part, it was called the English disease. Some chose another name for it, from certain symptoms which are obvious in it. Thus, as the joints are greatly enlarged, the Germans called it *articulos duplicatos*; the French *enfants nouez*; from whence others have also divided the *rickets* into

perfect and *imperfect*. As long as the epiphyses of the bones are only swelled about the joints, and the patient can still walk, it is called the *imperfect rickets*. But when the patient's motion in walking becomes more slow, and less firm, so that he easily totters or falls, whence he perpetually desires to sit or lie down, it is called the *perfect rickets*. I have often had children brought to me to be cured, supposed by their mothers to have been troubled with a *great liver*, when they manifestly had the rickets. We shall hereafter see that in this disease the liver is found of a vast size, though no other disorder can be discerned in this viscus after death. The above may suffice concerning the various names of the disease.

Glisson,* who, with seven other physicians of London, carefully examined this disease, having held a consultation with them concerning the origin and nature of it, together with its diagnostic and prognostic signs, and maturely weighed their different opinions, concluded the rickets to be a new disease; for when he compared the diseases incident to children, hitherto described, together with the rickets, he could find none that exactly agreed with this distemper then spreading in England. But even this novelty of the uncommon distemper impelled those famous physicians to search out the nature of the disease with united abilities, that they might more happily discover the best method of curing it. Hence they assiduously and faithfully considered and described the collected signs of the beginning and increase of the disease, how, and by what symptoms it changed into health, death, or other diseases; they remarked all the appearances found in bodies of children that had died of this disease; and from all these circumstances deduced the curative indications.

Three
THREE

* De Rachitide, p. 1, 2.

Three out of these eight physicians, viz. *Glisson*, *Bates*, and *Regemorter*, were appointed to arrange those matters which had been approved of by the common suffrages of the rest, and then commit them to print. But lest that a diversity of stile should be the consequence, when those three having divided the task, should set to writing the treatise, these famous men changed their minds, and left *Glisson* alone to spin out the first threads of it. He undertook this task upon condition, that the other two should hold a conference, and form a judgment of his work according to their own observations.

Thus a regular method, together with a fair example, is shewn, for examining a new disease, as also how profitable such concord may prove to human kind, when honest physicians, without scholastic disputes or envy, tend to one general object, namely, the public utility. All physicians agreed not in point of the novelty of the disease; some were of opinion, that it was known by the antients, but described under another name, and afterwards called the *ricketts* by *Glisson*. Upon another occasion, in Sect. 1379, where the history of the small-pox was treated of, I have remarked, that I always selected what I thought would be hereafter most profitable for curing of diseases, from those antient and modern physicians and authors I read. I arranged these collections in my minute book, in such a manner, that I could find whatever I had read or observed, concerning any certain disease, almost at the first view. Upon examining what I had collected about the ricketts, I saw that I had transcribed nothing concerning this disease from the antients: from whence it will be, at least, lawful for me to conclude, that the ricketts is not altogether so obviously described in the writings of the antient physicians as to be readily remarked by every one.

A very learned physician * endeavours to confirm the antiquity of this disease by many arguments, which take up a whole chapter, in which are collected those arguments which particularly impugn the novelty of the *rickets*, and which certainly merit the reader's attention.

He will have it that all the symptoms, at least the principal ones, of this disease were enumerated, either separately or united, by the ancients: but certainly the united symptoms define the disease. They may be separately in other men, and still the defined disease may not be in them. For a concurrence of the symptoms of the disease are required to determine a disease, and not one or two only.

I particularly wondered, that the famous *Zeviani* † believed, that the other physicians, who together with *Glisson* laboured in perfecting the treatise of the rickets, did not think the rickets a new disease, and therefore would not subscribe their names to the work, unless they first shewed themselves to be of a contrary opinion to *Glisson's*, because this matter was far more intricate than he indeed thought it. But in the notes, the preface which is prefixed to this little work is quoted. I have read this preface over and over, but could discover no difference of opinion amongst the eight physicians. Thus the error seems to have arose from inaccuracy.

The same author ‡ afterwards endeavours to prove, that *Glisson* has contradicted himself. But if the places quoted be attentively read, it will appear, that he only much wonders that he could not find himself to be the first author of the name given it. Certainly it is not unusual to give a name to an unknown disease, in those places it first appears in, which it afterwards retains when it has spread itself to other places. It seems very probable, that this

name

* *Zeviani della cura di Bambini attaccati dalla Rachitide*, p. 15 — 39. † *Ibidem*, p. 30. ‡ *Ibidem*, p. 31.

name was given it by the common people, as nobody before *Gliffon*, according to my knowledge, had wrote on this disease; neither is it very certain, that an author could be found for a name given it thirty years back; or yet any patient to whom the first name of it could be suited. *Gliffon* * himself gives the reason of this difficulty: *Populus, nomen morbi naetus, quasi re gnaviter gesta, acquiescit, neque ulterius se sollicitum vult de nominis autore, aut re ipsa*: “The people having obtained a name, in some measure a pertinent one, for the disease, acquiesced, and so it remained, neither were they solicitous about the author’s name, or the matter itself.” To prove a greater antiquity of this disease, it ought to be demonstrated, that the word rickets was used in England before the time that the disorder was heard of there, or at least a reason should be given why a disease, so long known, should have a new and unusual name given it by the common people.

But when the rickets afterwards appeared in other countries, a new name was in like manner given it, either from the name of the country it first appeared in, or else from some other manifest symptoms of the disease, as was a little before said.

After the rickets began to be observed in London, the physicians there doubted not of the novelty of the unusual evil; but they, in conjunction with *Gliffon*, took upon them the task of searching out the nature of this new disease: hence they judged not by hear-say of others, but saw the whole course of the disease with their own eyes, attentively examined the bodies of those who died of this disease, and those changes which they had manifestly discerned during the time of the illness, and as they had not before observed all these in any other disease, they concluded, that this must be a new one;

F f 3

and,

* De Rachitide, p. 4.

and, as they proposed to write a history of it, they meritoriously fought the first place of its appearance, and what name it bore there. They candidly confess to have collected these particulars from the relations of others, but were ocular, sufficient, and attentive witnesses of the rest.

Zeviani * alledges, that *Sydenham*, † of great authority in the practice of physic, has confounded the rickets with the atrophy of children, which happens after autumnal fevers, continual as well as intermitting ones, and even cured it with the same remedies : for the bellies of infants appear inflated, swelled, and hard, after long autumnal fevers, and frequently a cough with other consumptive symptoms attend : but he immediately adds, that these *Rachitidem plane mentiantur* : “ may plainly resemble “ the rickets.” He treated this disease in children by gentle purges, many days repeated ; and then ordered the abdomen to be rubbed with some penetrating ointment. But as the abdomen of ricketty children often swells, and that disease sometimes terminates in an hectic ; the reason appears of the similitude between these two diseases, though they are very different from each other. *Sydenham* adds, that he cured many infants even labouring under the *real rickets* in the same manner. Nobody doubts, that purges after long autumnal fevers are proper, if prudently applied, and the infarcted abdomen swells : but in the rickets, when there is not always such a quantity of dregs in the first passages, but the liver swells, the intestines are inflated, and the abdomen of course becomes tumid, they who labour under this disease have far less need of purging. Let us hear *Sydenham* himself ‡ in another place advising as follows : *Quoad Rachitidem hoc notandum, quod in tumoribus istis, qui ventres infantum post longas intermittentes febres olim infestarent, veræ Rachitidi*

* De Rachitide, p. 33.

† Sect. I. Cap. V. p. 121.

‡ Dissertat. Epistol. p. 511.

Rachitidi non multum abludentes, repetita catharsis omnino videretur indicari; cum ante usum corticis Peruviani istæ febres in diuturnitatem longam se extenderent, ac proinde sedimentum deponerent, hujusmodi tumorum causam, quæ ideo non nisi purgatione repetita abigi poterat. Attamen in Rachitide Vera cathartica locum non habent, nisi ut semel vel bis ut plurimum æger purgandus, antequam usum alterantium aggrediatur, &c. Denique hoc, quod innui, diligenter advertendum volo, cum non paucos infantes atque pueros a catharticiis sæpe repetitis (quæ forte tumor ventris invitaverat) interemptos fuisse satis sciam: “ With respect to the rickets, this is to be remarked, that in those tumours which formerly infested the bellies of infants after long intermitting fevers, which bear no great dissimilitude to the real Rachitis, repeated purging seems absolutely indicated; as these fevers lasted a long while before the Peruvian bark came into use, and for that reason deposited a sediment which caused this tumour; which therefore could not be expelled unless by repeated purgation. But cathartics are improper in the real rickets, unless it be once, or twice at the most, that the patient is purged before the use of alterative remedies, &c. Finally, I am willing, that what I have diligently collected together should be known, as I well know, that not a few infants and children have often been killed by repeated cathartics, (the use of which a swelling of the belly had perhaps seemed to indicate.”)

It is evident from the above, that Sydenham has not confounded the rickets with the decay of infants in consequence of long autumnal fevers; neither did he cure both these diseases by the same method, though they may appear to have something in common with each other; namely, the swelling of the abdomen, and that both sometimes terminate in a consumption.

But that no doubt may remain, the following passages are to be attended to: *Sydenham* had wrote a compendium of the practice of physic, with his own hand, for the use of his son, a doctor of physic, and out of his humanity also gave it to be used by a famous physician, who, that the most useful remarks of a man so famous in the medical art should not escape his treacherous memory, had about twenty copies printed for the use of his friends. But as that same treatise was afterwards found amongst some *curious miscellanies*, though useles from its trifling size, he not only communicated the genuine compendium to his friends, but to the public also; whence all his works were afterwards annexed to this treatise. If now the description of the rickets,* which is contained in this treatise, be compared with the state of those children's bodies in which the abdomen has swelled after long autumnal fevers, it will appear, that a great difference manifestly occurs between these two diseases, which are altogether different in themselves. And it appears, that *Sydenham* did not recommend the same cure for both these diseases; for there we thus read, *In tumoribus infantum ventres occupantibus, ab evacuationibus nimis procedentibus, sanguis & viscera herbis corroborantibus confortentur, ut in vera Rachitide, nisi quod axillæ etiam utræque inungantur, at non artus*: “In those tumours which occupy the
 “bellies of infants, proceeding from too great eva-
 “cuations, the blood and viscera should be com-
 “forted with corroborative herbs, as in the real
 “rickets, except that both the arm-pits are to be
 “anointed, but not the limbs.”

In as much as regards *Boottius*, I found † that one *Arnold Boottius* had wrote a treatise *de affectibus omis-
 sis*, published at London, in the year 1649, in 12mo,
 but

* Dissertat. Epistol. p. 778, 779

† Lindenius renovatus a Georgio Abrahamo Mercklino
 p. 88.

but I found not the rickets amongst the titles of the diseases he treated of, nor could I find that author when I was writing about these matters. But as *Glisson's* second edition came out in 1650, it is credible, that this author had seen *Glisson's* first edition. And it is said, that *Boottius's* treatise was published at Francfort, and Leipzig, in 1676, together with the four centuries of historical and medicinal observations, wrote by *Peter Borelli*. But by bad fortune I had only *Borelli's* edition at hand, which was published in the year 1656, at Paris, in which that treatise of *Boottius* is not inserted. Hence, this testimony that the rickets was common in France before *Glisson* had observed that disease in England, as *Zeviani* asserts, * I leave as it is, as we read thus only in the place he quotes: *Morbum non in Anglia dumtaxat & Hibernia, sed & in aliis quoque regionibus, grassari verisimile est, &c.* *Boot. de affectibus omissis, Cap. 12.* "That this disease is not only
 "destructive in England and Ireland, but very like-
 "ly is so in other countries also." There is no mention made of France here at least.

But the testimony produced from *Boyle* † by no means proves, that he denied the rickets to be a new disease, but only that he neither affirmed nor denied the point. Besides, that famous man was not a physician, and he speaks but in a cursory manner of this disease, in order to recommend the utility of the *flowers of steel*, in the cure of it, of which remedy more will be hereafter said.

It certainly must appear wonderful, that the English physicians alone have been astonished at the novelty of this matter, when they perceived the rickets, which they certainly examined not in a negligent manner, whilst some amongst the German physicians, boldly asserted, that no new diseases are bred, but all the calamities of mankind: *Vetè-
ribus*

* De Rachitide, p. 33. & in notis.

† De utilitate Philos. Experim. Sect. V. p. 270.

ribus non solum utique innotuisse, sed jam ante Hippocratis tempora mortale hominum genus afflixisse, creduntur simul ac demonstrantur, licet aliis atque diversis nominibus indigitati: * “not only were known to
 “the antients every where, but are believed, and
 “also demonstrated to have afflicted mankind before the days of Hippocrates, though pointed
 “out by other and different names.” Indeed I have known some physicians of that opinion, but am ignorant of the demonstration of it; nor do I know, that any antient testimonies have existed before the time of Hippocrates, which have been handed down to us, from which it may be proved, that all those diseases, which later times have seen, had been also known by the remotest antiquity. Where I have treated of the *small-pox, epidemical diseases,* and the *venereal disease,* I believe I have brought such arguments as prove the contrary.

But when the celebrated *Boerhaave* wrote of this disease, he did not revive the opinion concerning the novelty of the rickets, which is now almost entirely exploded;† tho’ many physicians amongst the Dutch and elsewhere believed the same. It is true indeed, that he stated the rickets to have appeared toward the latter end of the sixteenth century; but I knew that to be an error, and have therefore corrected it in his text. The reason was this: as the century is described in numerals, the name of the elapsed century remains in the whole course of the following one, and from hence the error easily arises when Arabic figures are described in Roman characters. For I certainly knew, that this excellent professor was entirely of *Glisson’s* opinion concerning the epocha of the rickets, nor was desirous of rendering that time nearer to the origin of the venereal disease, as *Zeviani* ‡ believed, because, in his history of this disease, he had remarked, in Sect. 1482, that

* *Zeviani de Rachitide*, p. 34, in notis.

† *Ibidem*, p. 35.

‡ *Ibidem*, p. 36.

that it much more infests those children whose parents have been subject to the venereal disease and repeated gonorrheas. But what is noted in Sect. 1488, merits attention, where he describes the proximate cause of the rickets, he does not affirm, that the venereal disease concurs to the proximate cause of the rickets, but only proposes the following sentence by way of a doubt : *Latente forte leni labe Venerea permista* : “ perhaps mixed with a slight latent venereal virus.” We will hereafter speak farther of this matter, and now go on with the rest.

But this dispute would be immediately settled, if it could be manifested, that the more antient physicians had described this disease, though distinguished by another name ; and it could be shewn, that the disease was attended with those symptoms of the rickets, which, by careful observations of this disease made by celebrated physicians, are described and known at present, in that order in which they mutually ensue in the beginning, increase, and maturity of the distemper. But, to the best of my knowledge, such a demonstration has not been hitherto made.

The famous physician *Navier*,* in his excellent treatise of the morbid softness of the bones, relates such an instance concerning an author, a physician who wrote about a whole century before the said epocha of the rickets, and is believed to have described this disease so exactly, that no doubt can remain but that he knew it, though he called it the cachexy, nor gave it any other particular name. *Johannes Baptista Theodosius*, a physician of Bologna, wrote medical epistles, which his son *Philippus Theodosius* collected after the death of his father, and dedicated to the *cardinal de Cæsarini*, in the nones of April, 1541 ; they came out in March 1554, in the city of Basil. Now in the front of the forty-second

* *Observat. Theor. & Pratiq. sur l'amollissement des os*, p. 24.

second epistle † we read thus: *Pro puero ex canfri & humoribus multis malis affectibus laborante consilium:* “Advice for a boy labouring under a canfrix and “many bad humours.” Behold now a description of the disease: *Ejus temperamentum declinat ad frigidum & humidum, ex quo color totius cutis pallidus redditur, ita ut ad cachexiam tendere videatur, & multæ in eo cruditates generentur. Affectus est debilitas virtutis motivæ, ita ut, cum mensium jam septendecim sit, non possit ullo modo se movere, nec stare, & cum in ulnis a nutrice defertur, vix caput potest erectum tenere. Symptoma aliud omnium sævissimum est vertebrarum trium in costis notis ad exteriora declinatio, & est modus gibbositatis, & in modum arcus costæ etiam incurvari videntur:* “The temperature of him declines to cold and humidity, by which the colour “of all the skin is rendered pale, so that he seems “inclined to a cachexy, and many crudities are “engendered in him. The complaint is a weakness and inability to move, so that this child of “seventeen months old can in no manner move itself nor stand, and when it is carried in the nurse’s “arms, it can scarcely hold its head upright. Another symptom, the most cruel of all, is, that “three of the vertebres of the true ribs bend outwardly and form a kind of hump-back, and the “ribs appear to be arched in the manner of a bow.” If any one compares these with the diagnostic signs of the rickets, which are enumerated in Sect. 1485, 1486, and 1487, he will plainly see the great diversity there is between them and these signs. There is no mention made of the swelling of the abdomen in the text; of the protuberance of the bones at the joints; neither of the premature sharpness of the wit, nor of the appetite, and very good digestion, &c. Moreover the ribs are said to be incurvated in this boy, whereas, in the rickets, the thorax becomes

* Theodosii Epist. Medic. p. 250.

becomes closely press'd to the sides, and the sternum rises to an edge, the extremities of the ribs being knotty and enlarged.

Nobody ever doubted, that the more antient physicians have observed both cachectic, crooked-back'd, and weakly children; but it has not been yet demonstrated, that they knew the disease at present called the rickets. But as many more contentions seem to be marshalled up in regard to the novelty of this disease, it may be lawful for me to follow this opinion until I am convinced by better and more certain proofs.

S E C T. MCCCCLXXXI.

THIS disease is never born with infants, and rarely bred in them before the ninth month of their age, hardly ever after the second year of life, but frequently happens in that intermediate space of time.

The rickets very seldom or never is born with a child, nor do I remember to have ever seen a new-born infant which already laboured under this disease: for though the vices of the parents, as will be mentioned by and by, might have begot such a disposition of body in their children, as might have rendered them liable to be attacked by this disease, yet it but very rarely happens, that the rickets breaks out into action before the birth of the foetus: Whence *Glisson* has wrote the following account: † *Testatur aliquis nostrum, se semel, & semel tantum, vidisse puerum recens natum hoc morbo afflictum. Atque in eo spina dorsi, & collum, adeo debilia, ut nulla ratione valuerint grandiusculum caput*

† *Glissonius de Rachitidie, Cap. XV. p. 172.*

caput sustinere. Obiit hic intra tres menses post partum. Quibus patet eum gravissime fuisse affectum:
 “ One amongst us testifies, that he once, and only
 “ once, has seen a new-born child affected with this
 “ disease; and that his back-bone and neck were
 “ so very weak, that his head, larger than natu-
 “ ral, could at no rate be sustained. He died
 “ in three months after his birth, during which
 “ time it appears that he was grievously affected.”

And where he afterwards treats* of the prognostic signs of the rickets, he has absolutely stated as follows: *Morbus hic proprie natus, sive qui ante partum invadit, periculosissimus est, & rarissime, si unquam, in sanitatem terminatur. Quo citius a partu, hoc est, quo juniores, hic morbus invadit, eo cæteris paribus periculosior est; tanto enim debiliores sunt vires. Similiter ætate grandiores junioribus, pedibus incedentes non incedentibus, facilius curantur:* “ This disease
 “ properly native, or if it invades the patient be-
 “ fore his birth, is dangerous and very seldom,
 “ if ever, cured. The sooner it happens after
 “ birth, and the younger the child whom the dis-
 “ ease attacks, cæteris paribus, it is the more dan-
 “ gerous, for the vital powers are more weak. In
 “ like manner, older children are more easily cured
 “ than younger ones, and children that can walk
 “ than such as are unable to walk.”

It is stated in a posthumous work of the celebrated *du Verney*,† that the disease of the rickets, for the most part, makes its attack in the fifth or sixth month of the patient's age; nor can it indeed be denied, that traces of the beginning disease have sometimes been observed at that time; but the disease for the most part begins later, as will be shewn in Sect. 1486. This disease very frequently attacks children after they begin to walk; and the first sign

* Glissonius de Rachitide, Cap. XXIII. p. 285.

† Traité des Maladies des os, Tom. II. Livre III. Chap. I. p. 289.

sign of it is commonly reckoned an inaptitude to motion, and a tottering gait; at length they are by the increase of the disorder much weakened, and obliged to lie down continually. If no signs of the rickets declare themselves before the second year of life, the child has for the most part escaped the danger of this disease; and the bones are then become so solid, that they can sustain the weight of the body without being easily incurvated. It happens, that infants at this age are very active, and almost in perpetual motion, unless strictly watched, whereby they attain more firmness and strength of body. Whence also tossing, shaking, carrying, swinging, and friction, are recommended for the cure of this disease, until children can move their bodies themselves; which will be treated of in Sect. 1489.

S E C T. MCCCCLXXXII.

BUT this disease is chiefly accounted most fatal to children whose parents are of a lax, weak, constitution of body, are indolent, delicate, live luxuriously, are fond of rich or fat meats, and confectionary, who eat little bread, drink sweet wines, and much warm water, who have been exhausted by chronic diseases, age, venery, and particularly if infected by the venereal disease, and weakened by repeated gonorrheas, for such generally afford no other than decayed seed in the getting of their children.

When the physicians very carefully examined all the circumstances which preceded this disease, that they might discover the cause of it, they observed, that those children particularly became ricketty whose
parents

parents were of a weak constitution, who led their lives in an easy, indolent, languid manner, and who were incited by the daily sumptuousness of a splendid table to eat more than was sufficient; whence Glisson * says, *Morbum hunc potissimum infestare generosorum cunas, præsertim eorum, qui molliter vivunt, deinde eorum, qui sedentariam & securam vitam agunt: Minime omnium cunas eorum, qui mediocris sunt fortunæ, & qui laboribus assueti sunt*: “ That this disease chiefly infests the cradles of the rich, especially of those who indolently live at ease; and next, those of such as lead a sedentary inactive life; but least of all, the cradles of those who are of middling fortunes, and are accustomed to labour, by which they must provide for themselves and families.” For the children of the lower class of people are oftenest affected with the rickets, when they, together with the parents, are through want obliged to use food unfit for them, and also as they generally dwell in little, cold, humid huts, not thoroughly defended from the inclemency of the air, which is highly injurious in this disease, as will be hereafter mentioned.

Many of the nobility and gentry, by being accustomed to hunting, riding, tennis-playing, and other exercises of the body, remain free from this disease, which usually proceeds from constant high living; but all the parts are weakened in the fair sex, principally from such a kind of life, who also usually indulge themselves with more sleep, and lead sedentary inactive lives. The wise *Lycurgus*, as I have remarked upon another occasion, in Sect. 1291, having the care of a future progeny at heart, commanded that, *corpora virginum, cursu, lucta, discorum & telorum jactu, exercerentur, ut & fœtus radix, validum in valentibus exordium sumens, germinaret melius*: “ the bodies of virgins should be exercised by running, wrestling, throwing of quoits, and

* De Rachitide, Cap. XXIII. p. 286.

“launces, that the rudiments of the foetus, taking a
“strong beginning in a healthy mother, might
“branch out the better in these very strong and
“healthy ladies.” Thus he was careful, that soft
delicate women, though married to robust strong
men, should not bring forth weak and diseased chil-
dren.

Confectionary.] It may be at least doubted whether sugar is so injurious to health, as certain persons think. The celebrated *Boerhaave* * thus speaks of that admirable substance, whose likeness can hardly be found. *Saccharum in corpore humano, naturaliter dilutum, lixivium præbet saponaceum; quod oleosa, viscosa, vi vitæ adjuvante, dissolvit; hinc pituitam nunquam generat, sed dissolvit, nec bilem auget, aut in illam convertitur, sed aperit, attenuat, dividit. Interim tamen, olea nimis solvendo, macilentiam inducere potest; ut & attenuatione nimia debilitatem producit, & laxitatem nimiam. Quare & Rachiticis & scorbuticis nocuisse visum:* “ Sugar diluted by the natural
“ juices of the human body forms a kind of soapy
“ lye, which dissolves oily viscous matter by the as-
“ sistance of the vital powers; hence it never gene-
“ rates phlegm, but dissolves it; nor does it aug-
“ ment the bile, neither is it converted into it, but
“ opens, attenuates, and incides. Yet its oily qua-
“ lity may, by overloosening the parts, cause a lean-
“ ness of body; and also by its attenuant proper-
“ ty it may bring on too great a weakness, and
“ too great a relaxation; wherefore it has been ob-
“ served to prove injurious both to the ricketty and
“ scorbutic.” He a little before had said, *Sine culpa male audit Saccharum quasi noceret hominum sa-
luti, cum nunquam hoc probatum fuerit:*† “ that he
“ wrongly heard that sugar was injurious to the
“ health of men, but that it had never been proved.”
If too great a quantity of it be taken, it perhaps

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* Elem. Chæmiæ, Tom. II. p. 160.

† Ibidem, p. 159

may be blamed for its great solvent property. I remember to have read of *Bernard Coster*, * a famous counsellor in Holland, who led a sedentary life, yet lived very soberly; but loved to have his meat and drink so much sweetened, that he alone took as much sugar as was sufficient for five or six other men; yet he never felt any nausea, or any bilious eructations from thence; neither was he subject to any diseases whilst he lived, but having passed the age of ninety years, exhausted by old age rather than any disease, was found dead in his bed. In another author many examples are related of men who used great quantities of sugar and honey, † and yet lived to a great age.

A fond mother archly smiled at a morose physician who had prescribed a small mixture, among the other articles of which was one ounce of syrup, and at the same time ordered her, with a stern and grave countenance, not to give the least particle of sugar to the patient her son, if she was desirous of preserving his life. The physician had forgot that all the syrups in the apothecaries shops contain two third parts of sugar.

Health is much more evidently perceived to have been injured in those persons who weaken their bodies with perpetual drinking of aqueous liquors; such is the very bad custom which prevails amongst the Dutch, who indulge themselves in a sedentary life, and all day long use those Asiatic drinks, made of the berries of coffee, or leaves of tea. I have seen such, who for the year round drank neither cold water, beer, or wine, especially when *Bontekoe*, a famous physician formerly in Holland, and his followers, had filled all persons there with a notion, that no remedy could be more useful for diseases, or could more effectually preserve health, than a copious use of these warm drinks, by which the humours of the body

* Historisch Verhaal, &c. in de Voorreeden.

† *Slare de Saccharo & Lapid. Bezoar.* Londin, 1715, in 8vo.

body are rendered extremely fluid, so that they may be freely moved through all the vessels. Hence the chlorosis, abortions, the fluor albus, and bad labours in women are so frequent, and often baffle the skill of the physician, when these women, hardly cured, afresh indulge themselves with these warm drinks, and so frequently suffer a relapse. But as sugar has falsely acquired an ill character in the notions of many persons, I have known several who entirely abstain from it, or at least use it but very sparingly.

Exhausted by chronic diseases, venery, age.] Nobody doubts that such parents beget weak, morbid, and languid children. Hence amongst the signs of perfect health are reckoned † the being born of sound robust parents, who are of full age, and rarely but fervently use venery. *Lycurgus*, who fortified the bodies of virgins before they were suffered to cohabit with men, ordered, that the new-married people should not live together, but privately, and as it were by stealth only, creep into one another's embraces, so that the act of venery might be more rare and fervid. Such care did he take to procure a robust and warlike posterity. It plainly appears what kind of a child is to be expected from decrepid parents, and also from those who in the vigour of their age, exhausted by a libidinous and depraved kind of life, enter into the married state, already old and impotent before they have arrived to the age of thirty years, and shamefully deceive the beautiful virgins they are wedded to.

Particularly by the venereal disease.] The history of the venereal disease, which is at large displayed in the preceding chapter, has taught us what a multiplicity of disorders happen from this filthy disease to the genital parts of both sexes. Now if it be considered, that the genital humour is washed by the
G g 2 filthy

† H. Boerhaave Institut. Medic. Sect. 885. 1.

filthy venereal virus, and that a part of the contagion is attracted by and mixed with it, it will be easy to understand what kind of a progeny must be expected by the republic from such parents. It is certain, that infants come often infected with the venereal disease from their mothers' wombs. These infants, when delivered to their nurses, infect these wretches, and they their husbands; many instances of which misfortune have been already recited. But whether such infants are sooner or worse affected by the rickets than others, is not yet thoroughly ascertained; for the rickets, as will hereafter appear, is a different disease from the pox; it is also more easily cured, and requires quite a different method of cure: besides, infants are born with the venereal disease, but not with the rickets, which never or very seldom begins at their birth, but usually manifests itself at some particular time afterwards. I do not doubt but that the rickets may succeed a congenial Lues; but I am certain, that infants though born perfectly healthy have been seized with the rickets, although no trace of the venereal disease had ever appeared in their bodies, nor any signs of a former precedent Lues could be discovered in their parents.

Thus, since it is evident that the venereal disease and frequent gonorrheas sometimes so weaken the organs of generation, that the wretches become almost incapable of begetting children, it seems that it may be concluded, but it is in no manner certain, that the origin of the rickets may also be derived from thence: besides, the venereal disease is, by a whole century, more antient than the rickets. It may perhaps be true, that the vices of the parents mentioned in this section may pre-dispose the infant to fall into the rickets even from slight causes, which those endowed with firmer bodies are capable of vanquishing by their own strength.

But how much the laxative, weak, and mucose disposition of the mother's body may make that of the child tend to the rickets, may be learned from the following observations. * A celebrated author treating † of the simple fluor albus, unmixed with any venereal acrimony, &c. such as so often occurs in lax, delicate, inactive women, who also feed upon rich diet, says, that such women, if not entirely cured before marriage, will easily miscarry if they should conceive. When abortion is guarded against by a proper treatment, that the foetus may come to maturity, he has remarked as follows: *Tales autem feminae pariunt plerumque infantes crassos, pingues, robustos, & hi tales manent per plures menses; postea vero emaciantur, lassi fiunt & membra pendula gerunt; tandem subsequitur pessima Rackitis, quæ raro huc usque sanari potuit:* “ But
 “ such women generally bear chubby, fat, and ro-
 “ bust children, and these remain such for many
 “ months, but afterwards become emaciated, re-
 “ laxated, and their limbs hang pendulous; at length
 “ a rickets of the worst kind follows, which as yet
 “ can but rarely be cured.”

S E C T. MCCCCLXXXIII.

BUT if the nurse is likewise affected by the same evils, the disease is the more increased in the child, as he grows too hastily in bulk.

As new-born infants almost live by the milk alone sucked from the breasts, it plainly appears, that if a nurse in whom such defects occur, as

G g 3

have

* Anton. Störck Ann. Medic. secund. p. 215.

† Ibicem, p. 211.

have been enumerated in the preceding section, affords nourishment to the infant; then this nurse should be changed, that a stop may be put to the invading disease. But though I always advise mothers to suckle their own children if they are healthy women, yet in this case I would prefer the milk of another sound robust woman to that of the mother, if she leads an inactive luxurious life, is weak of body, and also totally disturbed in mind from any slight cause. The rickets oftenest invades the children of the rich; hence a skilful and prudent physician can chuse the best from amongst many others who offer: which subject has been mentioned in the chapter of the diseases of *infants*. But as the rickets usually attacks children later; it is often time to wear it before the commencing disease makes a great progress; for it goes on but slowly, and is not so soon known in the beginning, by the common people at least.

S E C T. MCCCCLXXXIV.

CHIEFLY if the child is kept too cool and wet; if it is fed with watery, mucilaginous, unripe fruit, fish, unfermented, mealy, and sugared aliments; if it has a long time laboured under an autumnal intermitting fever, a chronic, or acute disease; if it has been ill cured of any sort of scurf, ulcers, St. Anthony's fire, or the itch, or the same have been improperly suppressed; if it has been enervated by warm bathing, fomentations, liniments, ointments, or moist vapours; if it is continually kept sitting still in an open-bottomed chair with the lower parts of its body naked.

The circumstances which are often observed to precede the commencement of the rickets, and which remarkably augment that disease when present, are now to be considered.

If kept too cool and wet.] Over-moist air loosens, dissolves, and weakens the fibres; such air affects the lungs on account of their perpetual respiration; it retains, increases, and accumulates the serum of the lungs, and prevents their perspiration.* But as the aerial cellules of the lungs would, if unravelled, by far exceed the whole superficies of the body in extension; hence the perspiration by the lungs is excessively great. Now if cold should be joined to a moist air, a serous defluxion is to be feared both in the lungs and in the cavities of the thorax; as has more fully been said in the chapter

G g 4

wherein

* H. Boerhaave Instit. Medic. Sect. 748.

wherein the dropſy of the breaſt was treated of. This ſeems to be one of thoſe cauſes why diſorders of the breaſt ſo often accompany the rickets.

Whence it alſo happens, that this diſeaſe not only attacks the cradles of gentlemen, but alſo viſits the hovels of the laborious poor, who, through want, cannot warm their rooms, nor keep their infants' clouts properly dried. Now if theſe wretches are obliged to live in moiſt, damp places, an increaſe of the complaints muſt enſue. It will hereafter, where the cure of this diſeaſe will be treated of, appear how ſerviceable a dry and warm air is; for if heat be conjoined with humidity, every thing ſoon tends to putrefaction, and threatens almoſt certain deſtruction.

If fed with watery, mucilaginous, unripe fruit, &c.] For all theſe relax, debilitate, weaken, and in the end enervate the action of the organs of diſteſtion. It ſpontaneouſly appears, that ſuch pernicious food can only take place in more adult children, as the nurſe's milk is ſufficient for the younger. Some poor women indeed uſually give a pap of flour and milk now and then to their ſucking children, particularly to ſuch as are almoſt ſtarved, and even cram the poor creatures ſometimes, trying to appeaſe every cry of the infant by offering it a ſpoonful of this pap; but as the clammy nature of the flour is not thinned by a previous fermentation, as in making of bread, the whole abdomen ſoon becomes infarcted with a glutinous matter, and ſwells; ſo that the infants miſerably languish. The uſe of fiſh is therefore particularly condemned, becauſe that it follows its own nature in weak habits, and eaſily grows putrid: beſides, there is in many kinds of fiſh a quantity of oil, which being eaſily rendered acrid and rancid, may prove remarkably injurious.

The uſe of ſugar was mentioned in Sect. 1482, yet *Gliffon* * has thus remarked: *Obſervatum eſt,*
hoc

* De Rachitide, Cap. XXI. p. 272.

hoc morbo laborantes dulcia, ut syrupos, tum bellaria multoque saccharo aut melle condita, quæ aliis pueris in delitiis esse solent, averfari: “ It has been observed, that children who labour under this disease detest all sweet things, such as syrups and sweatmeats made up with much honey or sugar, of which other children are usually so fond.” He seems to doubt whether these perhaps may not be offensive to them, because they thicken the humours. An highly saturated solution of sugar, namely, syrup, has a glutinous substance in it; but if a fourth part only of water be added to the syrup, it immediately runs, and loses its viscosity: thus sugar, as was before said, dissolves and attenuates, but thickens not.

If the child has laboured under an intermitting autumnal fever, &c.] That such disorders by debilitating the bodies of infants may pre-dispose them to the rickets seems very probable; and it even seems that this has induced physicians not to believe that the rickets was a new disease, but that it had always infested mankind, though under another name; as the abdomen in young children was observed to swell after long fevers, and chronic diseases, and the same is also likewise customary in ricketty children.

But I have by many circumstances endeavoured to demonstrate, in Sect. 1480, that Sydenham, that most excellent judge in distinguishing diseases, has set a wide difference between a tumour of the belly, which usually follows long fevers in young children, and that which accompanies the rickets; for he thus speaks of this matter; * *Observatu non indignum est, quod, cum febres autumnales teneram ætatem diu cruciarint, nulla spes sit easdem abigendi, donec abdominis regio, circa lienem præcipue, indurari atque tumesceri occæperit; iisdem enim gradibus, quibus hoc symptoma supervenerit, febris etiam fugam meditatur.* Neque forte

* Sect. I. Cap. V. p. 121, 122.

forte ex meliori prognostico aliquo morbum hunc brevi abiturum dixeris, quam si sedula observatione suboriri hoc symptoma perspexeris: “ It is worth observing, “ that when children have been long afflicted with “ autumnal intermittents, there is no hopes of van- “ quishing the disease till the abdomen, especially “ that part of it near the spleen, swells and grows “ hard; the distemper abating in the same degree, “ as this symptom manifests itself. Nor can we “ perhaps more certainly foretell that the disease “ will go off in a short time, than by carefully at- “ tending to the swelling of the abdomen in chil- “ dren.” He also says, that when these autumnal fevers gain a predominancy, these tumours then *tangentis digitum non aliter feriunt, quam si materiam aliquam continerent in schirrum induratum, cum qui aliis annis, simili licet περιπασει, contingit, tactum ita afficit, ceu tensio tantum foret hypochondriorum a sub- jectis flatibus:* “ appear to the touch as if the viscera “ contained matter hardened into a schirrus, which “ in other years yield to the touch, as if the hypo- “ chondria were only distended by wind.” We also read in the abridgment which Sydenham wrote * for the use of his son, where he enumerates the diagnostic signs of the rickets, *Abdominis repletio, hypochondriorum tensio:* “ a repletion of the abdomen, “ a tension of the hypochondria.”

If it has been ill cured of any sort of scurf, ulcers, St. Anthony's fire, &c.] In young children the skin is often corroded by an acrid serum, and the hairy skin of the head is more frequently thus affected, which begins to grow moist, with an itching; whence the child continually rubs its head against the bolster of the bed, or some other soft thing. As in the beginning of such a disorder, a sourish and very disagreeable smell is perceived from the humour; hence some would have such eruptions of the skin to be called *Acores*. The skin after-

* Sect. I. Cap. V. p. 778.

afterwards begins to grow red, and becomes as it were granulated, then it is called *Herpes miliaris*; because the evil spreads and stands prominent in the skin like so many seeds of millet. Others called it *Herpes ficosus*, because that in a fig when cut open some little round seeds appear like those little swellings in the skin. The flux of serous humours is then increased, and soon grows into foetid crusts, which sometimes become very thick and are pierced with many little holes, which still afford a passage for the viscid humours; that begin to adhere every where to the scab, and augment the thickness of it: at length the serous humour, discharged by the skin, is collected under these scabs, putrifies, and corrodes the skin; and these scabs degenerate into deep ulcers, which discharge a most foetid acrimonious sanies, which destroys the skin as moths do a garment; whence it is usually called *tinea*. I have upon another occasion, in Sect. 586, said, that I preserved the bones of a child's head which were eaten quite through by this sanies, and though cleaned, exhaled the same stench for many months after, which seemed intolerable to all who saw this miserable infant in its life-time.

Every body knows how difficult the cure of this disorder is, when it arrives to such a degree that the bones of the head already become affected by it, and what fatal effects are to be feared if the discharge of this acrid sanies is imprudently suppressed.

That this is particularly injurious to young children who are inclined to the rickets is testified by *Glisson*. * *Ad hæc, quod intempestivam impetiginis aut scabiei suppressionem sequatur, ut frequenter observamus, quando, rursus erumpente scabie, atque pruritu excitato, indeque aucto in externis membris calore, tales pueros facile restitutos vidimus:* " As to these " evils which follow an untimely suppression of the " itch,

* De Rachitide, Cap. V. p. 36.

“itch, ring-worms, or any other cutaneous eruptions, as I have frequently observed, when the eruptions break out again, and an itching is caused, and thereby the heat is increased in the external parts of the body, we see such children easily restored to health.” Which he also after confirms in another place,* where he collects the prognostic signs; *Scabies & pustulæ in cute, pruritusve huic morbo supervenientes, ad curam ejusdem multum conferunt*: “Scabs and pustules upon the skin with an itching, in this disease, are very conducive to its cure.”

If weakened by warm baths, fomentations, liniments, ointments, &c.] It will appear from the following observations, that in the rickets all the solid parts of the body are softened and relaxed, without even excepting the very bones, whilst the fluids also degenerate into an unactive, slimy, frigid, cacochymy. Now if the things above recited in the text are for a long time continued, they render the body of a sound infant very flaccid, and weaken it, and so bring on a disposition which favours this disease, and if this disposition is already in the body they soon increase it: but it will appear, where the cure of this disease will be treated of, that remedies the reverse to these are profitable, namely, a dry and warm air, dry comfortable warm clothing, dry frictions, &c.

If it perpetually sits still in an open-bottomed chair.] Nothing can be more injurious to ricketty children, or such as are inclined to this disease, than to be obliged to sit constantly in such open-bottomed chairs. This custom takes place in many places, particularly amongst people in low circumstances. It is convenient to the mothers, that they may apply themselves to their domestic labours, and take care of the rest of their families; and thus the fouling of a great many clouts is also pre-

* De Rachitide, Cap. XXIII. No. 27. p. 289.

prevented. To this end the children are made to sit with the lower parts of their bodies naked, in an open-bottomed chair which is all round closed up to keep out the cold from the naked parts. The trunk of the body, the head, and upper extremities project through a hole made in the top of this machine, upon which rattles and toys are laid, that the child may divert itself and remain contentedly shut up thus for several hours, without hindering its mother from doing her business by its cries. In winter-time the child is placed with its feet to the fire, that it may not grow cold; thus the inferior parts of the trunk and lower extremities are perpetually in a warm air, filled with the vapours that exhale from the body of the infant, and its urine and excrements accumulated in a receptacle placed underneath for that purpose: moreover, as the rickets also in its beginning creates a desire of sitting still, the children sit quietly almost the whole day long in this machine, and when they are taken from thence, a filthy stench is every where diffused around, which the poor little creatures must breathe in: hence it plainly appears, that all the evils attending ricketty children are increased even from this cause alone.

S E C T. MCCCCLXXXV.

THE commencement of this disease is known in those who cannot yet walk : 1st, By their age. 2dly, By the precedent causes. 3dly, By the brothers, or sisters being affected with the same disorder. 4thly, By a flaccid tumour of the head and face. 5thly, By the looseness of the skin. 6thly, By the swelling of the abdomen. 7thly, By the leanness of all other parts, particularly of the muscles. 8thly, By the protuberance of the epiphyses of the joints of the wrists, elbows, shoulders, knees, and ankles. 9thly, by the largeness of the jugular arteries and veins, while all the others grow less conspicuous and flat.

It is necessary to search out those signs which demonstrate the commencement of this disease, that a safe and effectual remedy may be immediately applied, lest the disease should increase. For, *cæteris paribus*, diseases are the more easily cured in proportion as they are more or less recent. But as was said in Sect. 1481, the disease may begin at different times of life ; hence let us treat of the signs of an incipient rickets, in children who cannot as yet go alone.

1st. This matter has been already mentioned.

2d. And the signs have been also enumerated, which might be observed in parents and nurses, as well as those which occur in the infant itself.

3d. In

3d. In a medical dispute, which, in 1754, the famous *J. Peter Buckner* held at Strasburgh, concerning the perfect and imperfect rickets, we read* of eleven ricketty children born of the same mother, who was troubled with the king's evil, and whose face denoted her to be an old barren woman at the age of forty years, so that a physician was astonished to hear her complain of the irregularity of her menses. It often happens, that many, though not all, in the same family, labour under the rickets, as it happened in this rare case; but as the father was always remarkably healthy, both before and as long as he begat children, the king's evil alone, with which the mother was afflicted, may be reckoned amongst the predisponent causes of this disease. (See Sect. 1482.) For there can be no evident suspicion of the other causes recited in the same place, as this married couple, who led a laborious life, are to be numbered among those who earn a livelihood by hard labour.

Such cases have not, without some appearance of reason, raised a suspicion whether the rickets may not pass from one to another by means of contagion. For this disease, undescribed by the antients, first invaded the western parts of England, and in a few years that whole kingdom, and afterwards was also dispersed through other countries.

I have, upon another occasion, remarked, in Sect. 1382, that diseases may be bred in a man from manifest causes, of which causes these diseases may be the effects; and yet the body of the sick person be so changed by those diseases, that he, by contagion, may infect other men who were not exposed to these manifest causes through which the sick person contracted the disease himself. A contagion is therefore bred in the human body in that time when the disease produced in it without contagion is present, and the disease

* Disputat. ad Morbor. Histor. opera Halleri, Tom. VI. pag. 285.

disease may be widely spread abroad by this contagion when once bred. I have endeavoured to explain this matter by many arguments in another place.

And the following proofs may perhaps increase the suspicion that the rickets are contagious: A celebrated professor of the art of surgery at Florence,† opened the body of a gentleman's child, two years of age, which died of the rickets; having removed the sternum, he found the lungs entirely covered with white lamellæ of an irregular figure, each of the bigness of the piece of coin called a *Julius*, somewhat of a polypous substance, loosely adhering to the lungs; so that some of these lamellæ spontaneously dropped into the cavity of the thorax.

A man famous in our art, and known by his most useful observations,|| found a large collection of purulent matter in one cavity or another of the bodies of those who died of contagious fevers. He found nothing but what was natural in the abdomen of a man who died, in eleven days, of a yellow fever, except that the bile was thicker and more grumous than natural; but there was a quantity of yellow water in the left side of the thorax, wherein swam some large pieces of yellow scabs or glue, which perfectly resembled the pellicle which covers the blood when drawn by venesection from the arm. These lamellæ resembled a membranous substance beginning to be converted into a purulent jelly. Similar laminæ covered over the internal and external superficies of the pleura, and the external membrane of the lungs, loosely adhering in some places, and more firmly in others.

Therefore as these lamellæ, above described, were found in a disease which was manifestly contagious,
in

† Anton. Benevoli Dissertazioni & osservazioni, &c. pag. 246, 247. || James Lind's two papers on fevers and infections, pag. 95, 96.

in the cavity of the thorax, and on the superficies of the pleura and lungs; and as similar ones are found in the dead bodies of ricketty children; some suspicion may at least be harboured, whether the rickets does not also propagate itself by contagion. The observations, made in §. 1409, may also be seen, where the contagion of epidemical diseases was treated of, and it was demonstrated, that a common cause adhering in the air might possibly produce epidemical diseases, and, indeed, of a bad kind too, so as to affect many persons at the same time, and still not pass from one man to another by a communicated contagion.

Glisson*, in his disputes concerning this matter, seems not to have been very distant from a suspicion of contagion, saying: *Forte equidem nonnullam leviusculam inclinationem alteri corpori possit imprimere; imo interdum ipsam forte morbi invasionem in corpore insigniter ad eum prædisposito acceleret aut promoveat; neque tamen propterea nomen morbi propriè contagiosi mereatur*: “ Indeed it perhaps may impress some
 “ slight inclination upon another body, nay perhaps
 “ accelerate or promote, in a body remarkably pre-
 “ disposed thereto, the very invasion of the disease;
 “ and yet not properly merit the name of a contagious
 “ disease.” He afterwards, inquiring industriously into this matter, frequently observed, *Pueros, seu coætaneos, seu prope coætaneos, in iisdem ædibus nutritos, quorum unus aut alter hoc morbo afflictus fuerit, dum alius aut plures eorum minime laborarent. Imo novimus pueros, non tantum communibus ædibus, assidueque mutua societate gaudentes, sed & quotidie communi mensa & lecto utentes, quorum alter hoc malo affectus socium convictus & concubitus nullo modo infecerit: quod sane vix videtur contingere potuisse in morbo propriè contagioso*. “ Children of equal ages, or there-
 “ abouts, nursed in the same house together, one or
 “ other of whom had been infected with this disease,
 Vc. XVII. H h “ whilst

* De Rachitide, Cap. xvi. pag. 183, & seq.

“ whilst the rest of them were entirely free from it.
 “ Nay, I have known children who not only lived
 “ together in the same house, were constant playfel-
 “ lows, and companions at bed and board also, yet
 “ though one of these was affected with this disease,
 “ he by no means infected his playfellows, or bed-
 “ fellows; which truly could scarce possibly happen
 “ in case the disease was actually contagious.”

In the king of France's treasury of natural curiosities, described by those eminent naturalists *Buffon*, and *Aubenton*,† whose writings will be admired by late posterity, a kind of dog is described and delineated; which on account of his low stature is called *Basset*; though his length of body is very remarkable. Sometimes a deformity is found in the skeleton of these dogs, in the bones of the fore extremities, and then they are called *Crooked shanks*: A similar defect is observed at the ends of the bones of ricketty children. No deformity appears in the other bones of such skeleton; nor is there any disorder observed in the substance of those bones that are deformed, but they are perfectly sound; on the contrary, the substance of the bones of ricketty children, manifestly degenerates from its natural state. Hence the celebrated *Aubenton* doubts, whether the first dog of this species had not first laboured under a kind of rickets, which might have given rise to that deformity; and afterwards the disease by degrees vanishing, the effect remained, and the deformity of the bones was thus transferred to posterity by hereditary right. Nay, he even seems to believe, that infants, born of ricketty parents, may convey the same deformity of body for a long series of generations; the deformity still remaining after the disease is cured: but, to the best of my knowledge, this has not been yet observed in the human species.

4th

† Histoire natur. generale & particuliere, Tom. v. pag. 300
 301. Tab. 35, & 31.

4th. It is observed, in all who are ricketty, that the head is bigger than natural, and the face more swelled than it ought to be in proportion to the other parts of the body; the face often looks sufficiently florid, but is always flabby also. Those who would have it, that the rickets was known by the antient physicians, though described under another name, believed that it was concealed in their writings under the title of Hydrocephalus, "watery head," and have endeavoured to prove it from the magnitude of the head, which always accompanies this disease. It is certain, that ricketty children have sometimes an hydrocephalus; but in many more the head is bigger than natural, though it contains not the least quantity of hydropic serum: besides, those who labour under the hydrocephalus become foolish, stupid, and forgetful, whilst the quantity of extravasated fluid increases; on the contrary, as will appear in the following section, ricketty children are distinguished from others of the same age by their sharpness of wit, and free exercise of their senses.

All authors, who have written of this disease, have mentioned this increased magnitude of the head; nay, *Glisson** testifies, that he had found this increased bulk of the head in all bodies he had hitherto examined of children who died of this disease, except in one only, who, together with this disease, had a suppuration of the lungs, and died of a consumption; but he also had a large head, and full face, during almost the whole course of the disease. But fourteen days before his death, the fleshy parts of his head fell away, and his face became so meagre and withered, that all his relations were astonished at such a sudden change in him.

5th. And this is perpetually observed: for as the muscular flesh in the body and limbs is decreased in bulk, and consumed; as if it were by an atrophy,

H h 2

therefore,

* De Rachitide; Cap. ii. pag. 10.

therefore, *cutis universa, tum vera, tum membrana carnosa & adiposa, flaccida & quasi pendula, laxæque instar chirothecæ, apparet, ita ut multo plus carni eas continere posse putes**: “The whole skin, as well
 “ as the fleshy and adipose membrane, appears flabby,
 “ and, as it were, pendulous and lax, in the manner
 “ of a glove; so that a person would imagine it could
 “ contain much more flesh.” Nay, the flaccid body grows not stiff after death; nor does it immediately lose its innate heat, as other dead bodies usually do †.

6th. The abdomen always swells either more or less; the fat is indeed consumed, and the plumpness of the muscles wastes away, yet the abdomen sticks out. *Glisson* ‡ has prudently remarked this, where he relates the appearances observed in the dead bodies of ricketty children before dissection. *Abdomen exterius quidem, respectu nempe partium continentium, macrum est, interius vero, respectu partium contentarum, nonnihil prominens & tumidiusculum sentitur*:
 “ Indeed the outside of the abdomen, with respect
 “ to its containing parts, is lean; but the inside of
 “ it, with respect to its contained parts, feels some-
 “ what prominent and swelled.”

It is to be remarked, that a tumour of the abdomen often happens in young children, though they are not ricketty. For after they have cut their first teeth, they are very ravenous; and the parents are delighted to see them greedily devour what is given them to eat, though even hard and of an indigestible nature; hoping from thence that their strength of body will in future be remarkable. Mothers, often over-studious to forward the growth of their children, stuff them with flour-pap, or pudding made of flour; so that sometimes their bellies and intestines are found distended after death. In such cases,
 cathartics;

* De Rachitide, Cap. ii. pag. 10.
 Histor. opera Halleri, Tom. vi. pag. 287.
 Cap. ii. pag. 11. & Cap. xxi. pag. 270.

† Disputat. ad morbor.
 ‡ De Rachitide,

cathartics, to expel this collected filth, used with prudence, prove of vast service; as also after long-suffered fevers, autumnal or intermitting, when the abdomen swells, as was before said in §. 1480. But the swelling of the abdomen, in ricketty children, is different; and therefore it was then remarked, that Sydenham would not have physicians copiously use purging medicines in the rickets, as one or two purges were sufficient.

*Glisson**, upon examining the dead bodies of ricketty children, thus testifies: *Hepar in omnibus a nobis dissectis justo majus, alias autem non male coloratum, neque valde induratum, aliove aliquo notabili vitio contaminatum*: “The liver, in all I have dissected, “is greater than it should be, but otherwise is not “of a bad colour, nor greatly indurated; or, in “other respects, contaminated by any other remarkable vice.” He excepts some dead bodies in which other diseases had been complicated with the rickets before death; as he remembered to have observed in a dropical and extremely tabid patient. From hence the reason appears, why the rickets has, in some places, been distinguished by the name of a great liver: he found no fault in the magnitude, colour, or substance, of the spleen; yet he denies not, that it might happen otherwise from a complication of the rickets with other diseases.

He saw a dropical serum in the cavity of the abdomen; but not frequently, nor in very large quantity. It is known, that there is almost always some quantity of extravasated serum found in the cavities of dead bodies after chronic and languid diseases.

He observed the stomach and intestines somewhat more distended by wind, than those of sound children; and he, from thence, deduces the cause of the tension in the hypochondre.

He sometimes found the mesentery perfectly sound, and sometimes full of large glands, if not strumous swellings.

H h 3

* *Ibidem*, p. 11.

swellings. But as the pancreas is placed transversely under the stomach, wrapped up in the duplicature of the posterior part of the mesocolon, it does not occur to the senses when the abdomen is dissected: hence *Glisson* would state nothing certain with respect to the condition of it, but left that to be enquired into by others. And he, for this reason, merits an implicit faith in those matters which he asserts to have seen in ricketty dead bodies.

He found the uropoietic viscera very sound in ricketty bodies, unless some other disease had also been present.

He, from all these observations, concludes as follows, in regard to the swelling of the belly in ricketty children. *Notamus in genere de omnibus visceribus in hoc ventre contentis, quod, licet partes ea continentes, ut supra monuimus, multum extenuatæ & emaciatae occurrant, ipsa tamen æque magna & plena, si non majora, ut de hepate dictum, quam in sanis deprehendantur**. “ We in general remark, concerning
 “ all the viscera contained in the abdomen, that tho’
 “ the parts containing them, as we have above said,
 “ may appear much extenuated and emaciated, yet
 “ these viscera are of equal magnitude and fulness,
 “ if not larger, as was said of the liver, than those
 “ in sound bodies.”

Benevoli †, upon opening the body of a ricketty child, found the abdominal viscera increased in bulk; that is to say, the intestines fuller than they usually naturally are, in proportion to the size of the body; he found the spleen and pancreas greater than usual; the liver still larger in comparison to the rest; yet nothing unnatural was found in this viscus, except the increase of its bulk. The celebrated *Heister* ‡, who lived three years at Wesslar, that he might

* De Rachitide, Cap. ii. pag. 12. † Dissertazioni & osservazioni, &c. pag. 246. ‡ Medicin. Chirurg. und. Anatomische Wahrnehmungen, pag. 25.

might more accurately enquire into the nature of the rickets, dissected the dead bodies of six or seven ricketty children, each two or three years old, during that space of time; and remarked that the abdomen was swelled in every one of them: but when the abdomen was opened, he neither found water or wind in the cavity of it, but the intestines were exceedingly distended with wind. In the intestines, for the most part, were found worms, with a great quantity of phlegmatic matter; and, in many, he found indurated glands; and, indeed, of such a bulk in the mesentery, as to equal a man's fist: and, moreover, the abdomen seemed harder to the touch, in these bodies, than in the others; which is not at all to be wondered at. He has not taken notice, that the liver was increased in bulk; of which, indeed, he makes no mention, neither has he of the spleen or pancreas. But as the celebrated *Heister* was of such great reputation in his profession, and so conversant in anatomy, a doubt may from hence arise, whether the increased bulk of the liver so frequently occurs in ricketty bodies as *Glisson* has affirmed.

But, in regard to this matter, it should be remarked, that these dissections, of ricketty dead bodies, were performed by *Heister*, in his juvenile days, while yet a student of medicine, under the auspices and instructions of the learned *Moller*, a physician of the Imperial chamber, celebrated for his successful and extensive practice. Now he published these observations, after the seventieth year of his age, being still healthy and robust; whence it seems probable, that he had then particularly attended to the morbid parts, which occur in dead bodies, and that the liver, although increased in bulk, was, as before said, usually perfectly sound in those who died of the rickets. As, therefore, other grave authors, very worthy of credit, agree concerning this increase

of the liver in ricketty bodies,* it appears, that the liver increased in bulk, may be also considered as a concurrent cause of the tumor of the abdomen, which is observed in ricketty children.

But anatomists know, that the viscera are frequently very different in size, not only when morbid, but also when their colour, consistence, situation, &c. show nothing unnatural in them, but an increased bulk alone occurs to the senses. Nor were there often any signs before death, which could cause a suspicion that any thing morbid lurked in the viscus, which is found of an unusual large bulk in the dead body. I remember to have seen, in the dead body of a youth, the spleen in its natural situation, but so long, that the extreme part of it descended to the spine of the os ileon: the colour of this viscus was natural, and nothing præternatural was discovered in its substance, though carefully examined by an able anatomist, and several physicians present. But although I had the care of the deceased, from his first appearance in this world, I never could discover any thing that could cause even the least suspicion, that the spleen had ever been affected.

The antient physicians seem to have made the like observation, and to have denoted it by a peculiar name; for they called persons so affected, in whom some of the viscera were præternaturally large and tumefied, *μεγαλοσπλαγχνες*. For though they believed that such people lived subject to diseases, and sometimes used the same name, when the enlarged viscera were diseased, yet they appear to have acknowledged, that there were men who naturally had large viscera; concerning which matter, the observations of *Foesius* † may be seen.

7th.

* Vide Schenckium Observat. lib. ii. de Phthisi Observat. 3. pag. 258.

† Oeconom. Hippoc. litera M. pag. 242.

7th. It was remarked in number five, that all the fat is perpetually diminished, and at length almost totally consumed: but as it is known, the muscles are not only every where surrounded by the cellular membrane, but also the same membrane insinuates itself between every one of the fasciculi of the muscular fibres, of which the greater muscle is composed, even to the very ultimate subdivisions; whence the muscular fibres cannot grow to their neighbouring parts, but always remain separated from them. Hence, when a very great emaciation happens, the plumpness of the muscles is diminished beyond imagination. Indeed it is true, that in the ultimate stage of old age, when the withered juiceless body becomes rigid, there scarcely remains any fat in it, and yet the motion of the muscles is not entirely destroyed, neither is it lost in the most confirmed consumption, when the skin alone seems to cover the bones; but the muscular fabric itself still remains sound, which is by degrees diminished in the rickets, and is finally observed to be destroyed when the plumpness and bulk of the muscles, as it were, are abolished, and that which remains languishes from an inert flaccidity. For the cause of muscular motion is not in the muscles, but is derived to them from elsewhere, when they are put in action; but, that this action may be performed, a due structure of the muscle is required, that the moving cause brought by the nerves to the muscles may yield its effect. Let what was said concerning this matter, in §. 1058 and 1059 be referred to.

The famous *D'aubenton*,* in his natural history, where he describes the skeletons and particular bones of ricketty bodies preserved in the royal repository at Paris, remarks, that the fleshy parts of the body lose their due firmness for want of good nourishment;

* Histoire natur. gener. & particul. avec la descript. du Cabin. du Roy, Tom. III. p. 56, &c.

ment; and that the bones cannot be sufficiently consolidated whilst they are growing: hence the vertebres, whose substance is very porous, are softened and subside; whence follows a pressure of the spinal marrow, and of the nerves which emerge from the back-bone, and the power of exercising the muscular motions of the trunk and lower limbs is more and more obstructed, and at length almost entirely lost, whilst the disorder daily increases. There are indeed wonderful depravations of the back-bone observed in ricketty skeletons; nor does it seem improbable, that the spinal marrow contained in the canal of the vertebres, and the nerves emerging from the spinal marrow between the commissures of the vertebres may be compressed: yet a real palsy is hardly ever observed in a ricketty body. Amongst those miserable wretches whose cure has been totally neglected, we see some so totally deformed, and the spine of the back distorted to such a degree, that it scarcely seems possible that this could happen without the nerves and spinal marrow being greatly compressed, and yet no palsy is observed in them. Moreover *Glisson*,† whose testimony is of the greatest weight in the history of the rickets, thus testifies: *Nunquam, quod meminimus, Paralyfin, aut Apoplexiam, huic affectui supervenisse novimus; deberet autem necessario sæpius (saltem in morbo confirmato) evenire, si laxitas & debilitas hæc nervorum a defectu influxus cerebri originem duceret*: “ I do not remember to
 “ have ever known a palsy, or an apoplexy happen
 “ from this cause; but it necessarily must often en-
 “ sue (at least in the disease when confirmed), if this
 “ laxity or debility of the nerves was caused by a
 “ defect of the influx of the brain.” These distortions of the back or chine-bone are the less dangerous, because they are slowly and gradually formed in ricketty bodies; and that the case of the vertebres, as it diverges from a straight line, forms a remarkable

* De Rachitide, Cap. IV. p. 26.

markable segment of a circle; whence the spinal marrow gradually accommodates itself to the changed figure of the bony canal through which it passes. The same happens in regard to the nerves, which diverge from the vertebres throughout the whole length of the canal.

8th. The bones serve to sustain the human body; they afford a firm prop to the softer parts adhering to them; nor could muscles so large exercise a power which is found to be so very strong, in the human body, and in the bodies of greater animals, unless the extremities of these muscles were affixed to hard bones.

The body of an animal in its first formation is like a mass of soft glue; nor have its bones more solidity when first produced, which yet afterwards acquire so much strength and hardness. The celebrated *Haller* was pleased to search into those matters, which happen in bones when they are changed from a flexible glue, into so hard a substance, that they will for a whole century withstand the injuries of the air when exposed thereto in public churchyards, and still remain almost sound. He by his usual and incomparable industry made these experiments on eggs during incubation. He observed this glue quickly and readily converted into a manifest gristle, for a greater solidity only seemed to be required; but he could not so easily understand how a flexible and elastic gristle could be changed into a hard and brittle bone. The gristle, or cartilage, whilst yet tender, is pellucid. The first sign of this gristle, or cartilage, becoming ossified is its opacity and yellowish colour; likewise in that very place, the bony fibres then begin to appear. This change happens in the bones of the chicken about the eighth day of incubation. The first rudiments of blood appear in this ossifying gristle, or cartilage, on the tenth day; there is a redness in it on the eleventh day, and the arteries are now so dilated, that they

they are capable of transmitting through them the red globules of blood, and a bony hardness is observed in the same place of the cartilage: and all these phenomena appear in the callus of a broken bone, before it is consolidated into bone. I have explained all these matters upon another occasion, in Sect. 1261, where the *gouty lime* was treated of. But what is brought to the gristle, or cartilage, through the arteries, whose magnitude is already so increased, that they are capable of admitting a thicker substance, seems to be earth; which, deposited between the different lamina of the cartilaginous substance, is the cause that a hard and fragile bone is formed from an elastic and flexible gristle.

Whence it follows, the if that earth, which by its mixture converts the gristle into a bone, could be taken away from the bone when formed, then that bone would be changed into a gristle again.

This is demonstrated by a sure and curious experiment. (vide Sect. 1261.) For a skull, which had lain for many years in a church-yard, being steeped in aqua-fortis diluted with a quantity of pure water, became entirely flexible and elastic, so that being thrown on a pavement it hopped like a tennis ball. Hence it is very justly concluded, that a gristle differs from a bone, in wanting that terrestrial substance which is dissolved in acids; and if that earthy substance is taken from the bone steeped in acids, the gristle, latent for so many years in the real bone exposed in the church-yard, will appear.

Besides, it appears from the experiments of the celebrated *du Hamel*, and others, that this earthy substance is ting'd with a red colour, if *madder-root* be mixed with the food of animals; and that all the colour vanishes when the earthy particles of those bones are dissolved by steeping them in an acid liquor, and that the gristle remains no longer coloured.

But

But it also appears from hence, that the necessary actions of life perpetually consume the solid parts of the body, not excepting even the bones; and that the lost parts are restored by the same actions of an healthy life. For when he alternately fed animals with their accustomed food, sometimes adding madder to it, and sometimes not for some time, he found their bones variegated with white and red circles; and he also learned, that in the space of a month a remarkable quantity of earth had been brought to the bone, which he could easily distinguish by its colour. It in like manner appeared, that in six weeks all that redness vanished, if the animal used its common food without any addition of madder; when some other similar matter supplied the loss of the earthy substance of the bones, but no longer tinged of a red colour.

Hence it may be concluded, that this earthy matter, which added to the gristle converts it into bone, had circulated with the healthy humours through the vessels, and had restored to the bones what they had daily lost of their substance, as also that which is required for the increase of the bones in young animals: whence a chicken is hatched from the egg in twenty days, which already stands upon firm bones, and runs every where about.

But this same earthy matter when it is changed by some disease, or cannot be properly applied to the boney parts, is deposited in other places, or even purged away from the body, as was said in Sect. 1261. Quere, Does not something of the like nature sometimes happen in ricketty bodies? *Glisson** thus says; *Aliquis nostrum testatur, se semel vidisse glandulas strumosas, tam numerosas, ut viderentur æquare, si non superare, magnitudinem ipsorum pulmonum: sitæ autem fuerunt utrimque inter pulmones & mediastinum, & a thymo usque ad diaphragma protensæ:* “Some one of us testifies, that he has once
“ seen

* De Rachitide, Cap. II. p. 13.

“ seen strumous glands so numerous that they
 “ equalled, if not exceeded, the magnitude of the
 “ lungs themselves : but they were situated on ei-
 “ ther side between the lungs and the mediastinum,
 “ and reached from the thymus to the diaphragm.”

In the dead body of a ricketty child the membrane that surrounds the lungs was rough, and beset with protuberances and tubercles, not unlike warts. *Aper-tis pulmonibus, in pluribus locis tartarea seu gypseæ substantia concreverat* : † “ The lungs being opened,
 “ there was a tartareous or gypseous substance found
 “ concreted in many places.” *Benevoli* ‡ in the body of a noble child who died of the rickets, upon cutting through the substance of the lungs, found them stuffed with a thick white glutinous matter, which oozed from the lungs when pressed, as from a sponge : he believed the lungs were full of chyle, collected and indurated there ; but this scarcely seems probable. We read a similar observation of a ricketty child §, in whose right-arm, above the elbow, was found a thick substance, as it were of a gristly nature, from which when opened flowed a white matter like curdled milk, or coagulated cheese ; a similar thick cartilaginous membrane was found in the right thigh, which wrapped up a tumour from which when opened flowed a liquid like the former, but rather thicker, white, cheesy, not in the least foetid, about three ounces in quantity.

Now if that terrestrial matter, on which the strength and firmness of the bones depends, is not applied to them in a due manner and quantity, their flexibility will be the greater ; whence, whilst the weight of the body rests upon bones not yet consolidated, the pressed epiphyses begin to grow prominent and swell ; and in young children who cannot go alone, such knotty swellings particularly appear

† Boneti sepulchret. Tom. I. p. 912.

‡ Dissertazioni & osservazioni, p. 247.

§ Aëta Physico-Medica natur. curiosorum, Tom. I. p. 103.

appear in their wrists, because, when in a sedentary posture, they often rest on their hands, as *Glisson* hath remarked. || These swellings, if examined, are not in the fleshy or membranous parts, but are situated in the very extremities of the bones, particularly in their epiphyses : nay, if these knobs or swellings of the bones are rasped away with a file, it appears, that they are of the same similar substance as the rest of the bones. * Now he thought this worthy to be remarked, because † *conjectarunt aliqui, ossa in hoc affectu interdum esse flexibilia instar ceræ. Sed nos nusquam id vidimus, neque ab oculato teste fide digno relatum audivimus. Quare, ut fabulosum, hoc signum plane rejicimus* : “ some conjecture that the “ bones in this state are sometimes flexible like “ wax ; but we have never yet seen that, nor heard “ of it from any eye-witness worthy of credit ; “ wherefore we flatly reject this sign as fabulous.” Indeed it has been often observed, that in adults the bones have been entirely softened, but they become less firm in ricketty children, are incurvated from the incumbent weight, the pressed epiphyses become protuberant, and thus the body is miserably disfigured, and, unless the disease is entirely cured in time, these deformed bones again become hard, and the deplorable traces of the past disease remain during life.

The increased size of the vessels passing up to, or returning from the head, so frequently occurs in ricketty bodies, that some authors, who have treated of this disease, would have it, that its essence consisted in that depravation of nutrition alone, through which some parts of the body are overloaded with nutriment, hence are too much augmented in bulk, and other parts, inasmuch as they receive less, also necessarily waste away. The increase of the viscera in bulk was before mentioned, and it was remarked,

|| De Rachitide, Cap. II. p. 10.

* Ibidem, p. 11.

† Ibidem, Cap. XXI. p. 269.

remarked, that they seem not always morbid; and also that the head and face appear enlarged, though the other parts of the body rather decrease. Persons attentive to the cause of the increase of the upper parts of the body, have observed, that the arteries and jugular veins grow large, whilst the other vessels are smaller than natural. *Glisson* † indeed affirms the same, but adds with his usual honesty, that this augmentation of the vessels hath often appeared *in corporibus novissime apertis*: “in bodies very lately opened.” Yet he dares not conclude from thence, that this circumstance is perpetually found in this disorder, though he suspected that it always is so. He gives the following reason why he could not produce an ocular witness of this matter; *Non venerat nobis in mentem, id antea ab initio nostræ Anatomicae circa hoc subjectum indaginis scrutari*: “We did not imagine that this subject of enquiry was to be scrutinized from the beginning of our anatomical disquisitions.”

S E C T. MCCCCLXXXVI.

BUT the growth of this disease is known in those children who have already begun to walk. 1st. From all the before-mentioned symptoms having preceded. 2d. From their slow, tottering, feeble manner of walking, their being unable to stand firm or long, but always inclined to sit down; which soon changes into an habit of perpetually lying down, and at last into an impossibility of moving any limbs, with a loose hanging neck, and

† De Rachitide, Cap. II. p. 15.

and nodding of the head. 3d. By a premature acuteness of wit, a clear apprehension and quick sense, while the appetite and digestion for the most part continue unimpaired.

It was before said, in Sect. 1481, that the rickets is hardly ever born with children, that it seldom begins its attack before the ninth month of a child's age; and if no trace of the commencement of the disease had appeared in the child before it arrived to the age of two years, it will hardly ever be in danger of such an attack afterwards: the signs of this disease in children who cannot walk, have already been treated of; now the signs of the disease in such as have begun to walk are to be examined.

1st. These signs have been already treated of.

2d. Sound children are hardly ever still, as long as they are awake, but perpetually move their bodies and joints, unless hindered, run here and there, catch at all they see, and are no sooner in possession of these things than they immediately throw them away, and hasten to grasp at new objects; thus nurses are much fatigued with their little ones. It is known, that almost all diseases, particularly the more severe, begin with a spontaneous lassitude and heaviness of body; fevers, or other acute diseases, follow soon after these preludes of diseases. When therefore the agility of body and petulancy begin to diminish in young children, though no other disease immediately follows, there is reason to suspect the rickets; which suspicion is more strongly confirmed, if this unusual lassitude of body, and dislike to motion, are of any long duration. This debility of motion in the muscles begins from the very first rudiments of the disease. If children are attacked with this distemper within the first year of their age, or thereabouts, they are then slower than usual

in getting the use of their feet, so that they, for the most part, speak before they can walk, which is held to be a bad omen in England.* If they have already begun to walk before they are attacked by the disease, they walk slowly, stand weakly, stagger, totter, and fall. When they are pleased, they laugh not so heartily, neither are they so vigorous, or vibrate their limbs as if they were capable of springing or leaping out of the hands of those who hold them; neither do they when angry plunge and kick, or cry with such animosity as sound children of the like age usually do. They are not delighted with swinging, tossing, or other violent motions, like other children; nay, they rather abhor all such exercises, as the disease increases. When they cry they are quieted by mild, soft treatment, and not with any manner of rough play; neither are they much delighted with rattles, play-things, or childish plays, yet they are not stupid, but ingenious and serious; and as *Glisson*, whose words I use in describing the signs of this disease, excellently remarks,† *Vultum videre est magis compositum & severum, quam ætas postularet, acsi in rem seriam aliquam meditabundi essent*: “The face appears more composed and grave than the age of such a child requires, as if it were meditating some serious matter.”

But as the firmness and plumpness of the rest of the muscles, except those placed about the head and face, is gradually diminished, so that they may be felt loose and pendulous under the flaccid skin, hence the constant inclination to sit still, at length changes into a desire of perpetually lying down; because they cannot in a sitting posture hold their bodies upright, but sometimes incline them forwards, sometimes backwards, and then to either side, in search of some prop or support, to rest upon and indulge

* De Rachitide, Cap. XXI. p. 263, 264.

† Ibidem, p. 265.

indulge their sloth. It is shocking to behold, how the head, increased in bulk when the disease has taken deep root, can no longer be sustained by the then too slender neck, but continually nods or wags to one side or other. A similar weakness is observed in the back or chine-bone; whence *Glisson* † also gives us this prognostic sign: *Quo enormior est moles capitis, eo longior & difficilior curatio. Quo debiliior est spina dorsi, eo gravior & periculosior morbus:* “The more enormous the bulk of the head becomes, the longer and more difficult is the cure. “The weaker the back-bone, the more severe and “dangerous the disease.”

3d. These children, though weak and sluggish in moving the body and limbs, are endowed with more acuteness than could in reality be expected from such a tender age: besides, the free exercise of all their senses remains unimpaired. Hence the functions of the encephalon remain pretty entire in this disease; that alone which presides over the voluntary motion of the muscle decays, or languishes. Perhaps the cause of impaired muscular motion exists not in the head, but depends rather on the lost plumpness, and inactive languor of the muscles, which are observed in the rickets; for when the vapid cacochymy attending this disease is amended by proper remedies, and the strength usual at such an age restored to the solids, the muscular motion returns as fast as these disorders of the solid and fluid parts of the body are corrected.

Yet the following opinion of the famous *Peter Buchner* §, who assiduously investigated the symptoms of this disease, is not to be pass'd by: *Ego saltem plures stupidos Rachiticos, quam facultatibus animalibus valentes, hætenus vidi: Etsi hos quoque viderim:* “But I have hitherto seen more ricketty children “who

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† Ibidem, Capite XXII. p. 286.

§ Disputat. ad morbor. histor. opera Halleri, Tom. VI. p. 285.

“ who were stupid, than such as were possessed of
 “ sound animal faculties ; though I have also seen
 “ many of these too :” But it is to be remarked,
 that we are here treating of the signs of the ap-
 proach of this disease in children who were capable
 of walking before the disease attacked them : hence
 it would be no wonder, if the ricketty subjects
 in the beginning of the disease possessed a sharp-
 ness of wit, and the perfect exercise of their senses,
 and afterwards became stupid and foolish in the
 course of the disease : this might particularly hap-
 pen if an extravasated serum should begin to be
 collected in the cavity of the skull. *Glisson* * thus
 testifies concerning the heads of some dissected rick-
 etty children : *Inter duram & piam matrem, atque*
in ipsis ventriculis cerebri, serosas aquas in nonnullis a
nobis dissectis reperimus ; unde patet, affectum hunc cum
hydrocephalo complicari posse. Cerebrum in aliis a nobis
dissectis satis firmum & inculpabile, neque illuvie serosa
inundatum, deprehendimus : “ We have found in
 “ some ricketty heads, dissected by us, a waterish
 “ serum between the *dura* and *pia mater*, and in the
 “ very ventricles of the brain : from whence it ap-
 “ pears, that this disease may be complicated with
 “ a hydrocephalus. We have found the brain very
 “ firm and unblemished in some others dissected by
 “ us, nor inundated by a serous colluvies.” Whence
 that idiotism, if it sometimes accompanies the rick-
 ets, proceeds not from the genius of this disease, as
 on the contrary, an acuteness of wit is usually and
 very often admired by physicians in ricketty chil-
 dren ; but it takes birth from some other additional
 disease, such as a collection of an aqueous serosity
 in the cavity of the skull.

For *Glisson* † wisely admonishes physicians, that in
 progress of time almost all diseases are associated with
 others of a different kind, and that therefore some
 chronic

* De Rachitide, Cap. II. p. 15.

† Ibidem, p. 8.

chronic diseases had, for the most part, been complicated with the rickets before death. Therefore, it is not to be believed, that every thing præternatural found in the bodies of children who die of the rickets has appertained to this disease, as perhaps it rather may proceed from some other disease complicated with the rickets before death. In order, therefore, to determine any thing certain with regard to this matter, many dead ricketty bodies ought to be diligently inspected, that a just distinction may be made between those circumstances which constantly, frequently, or rarely occur in the bodies of those who die of this disease. He also advises it to be remembered, that those bodies which are dissected, must have suffered grievously from this disease, as they have died of it; and therefore the same symptoms are not to be expected in the living who are but recently affected, nor the same violence of the disease, the effects of which are found in the dead body. He who should conclude after an empyema found in a dead body, that the purulent matter had given rise to a pleurisy, which suppurating had afterwards produced the empyema, would expose himself to the danger of a mistake.

But, particularly in the commencement of this disease, the appetite and digestion remain very perfect; whence the evil subtilly creeps on increasing by degrees: but as it has appeared from what was before said, that the abdominal viscera are indeed enlarged to a great bulk in ricketty children, but in other respects are very sound, it does not appear so wonderful, that their actions should still remain no ways defective in the incipient disease.

S E C T. MCCCCLXXXVII.

WHEN the disease is at this height those affected therewith have a large head, with very wide apparent futures; the thorax is flat and squeezed as it were on the sides, but raised high and pointed on the breast, with nodes at the extremities of the ribs; the abdomen projects outwards; the teeth are rotten and black; all which increasing daily, often leave distempers of the same kind, troublesome all the rest of their days, chiefly the spina ventosa, and a caries of the bones.

Those changes which are observed in an advanced state of this disease now follow.

A large head, with very wide apparent futures.] The skull, as it is well known, is not wholly ossified in a new-born infant; for the bones of the head are as yet separated from each other, and a membrane supplies the deficiency of bone, for this purpose, that the head of the infant, which in the time of birth passes through the straits of the pelvis, may yield to the strong efforts of the woman in labour, and more easily come into the world. In that part of the skull where the bones of the forehead are afterwards united with the parietal bones by a future, there is a great opening of an irregular figure, where no bone, but a mere membrane only, is felt by touching the part, which is usually called the *fontanelle*. As the child advances in age this membrane gradually changes into a bone, either sooner or later, in different children. I more than once have seen the

the fontanell still remain membranous until the seventh or eighth year of a child's age. The bones of the cranium are afterwards united by futures, all the membrane disappearing; therefore, all that space between the bones of the skull not as yet rendered contiguous to each other, comes under the name of the futures, which are therefore the wider in proportion as the bones of the skull continue more distant from each other.

It is well known, that the cavity of the skull is naturally always full; and it has appeared, in Sect. 295, where wounds in the head were treated of, that unless the bones of the skull restrained the contained soft encephalon, it would easily burst out when a man forcibly raised any great weight, endeavoured to remove any obstacle with all his strength, strained himself violently at stool when costive, was agitated by sudden, and protracted laughter, or shaken by violent repeated fits of sneezing. Whence it happens, if this boney covering is wounded, or if a circular portion thereof is cut away by a surgical operation, to prepare an issue for the extravasated humours collected under the skull, which compress the soft encephalon, that surgeons so carefully defend the injured place, sensible that if they neglected it, the encephalon, in the part where the trepan was applied, would in a short time emerge in the form of an over-grown fungous excrescence, which would grow again as soon as cut off, and not only fill the hole made by the trepan, but would swell out every where beyond its margins.

As therefore a considerable part of the skull is still naturally membranous in new-born children, and is to be gradually changed into bone, the reason is evident why the heads of young children though healthy are proportionably greater; which is also always observed by painters and statuaries; but in ricketty children the bones are softer, and the membranous spaces between the bones of the

skull are wider ; hence the whole fabric of the skull more easily yields to the distending encephalon ; whence the reason also appears, why an increased size of the head in ricketty children is enumerated amongst the diagnostic signs of this disease. Now if it be considered, that the quantity and impetuosity of the humours towards the head are augmented from the magnitude of the arteries and jugular veins (see Sect. 1485, No. 9.), it evidently appears, why the bulk of the head may be increased on account of these three concurrent causes, the softness of the bones, the membranous state of a considerable part of the skull, and a copious afflux of blood to the part, whilst the rest of the body seems rather to decrease.

And thus a disposition to a hydrocephalus arises, which sometimes accompanies the rickets, and sometimes is a consequence thereof.

It was before shewn, by many arguments, in Sect. 1485, No. 8, that the solidity of the bones depended upon a due proportion of earth united thereto ; and that if the earthy particles were taken away, the bone would be then changed into an elastic flexible gristle. It was there also remarked, that the earth intimately united to the bones is consumed by the necessary actions of life, is cast out of the body, and the loss of it restored by a similar substance, which preserves the due firmness of the bones. This firmness would be diminished, if it was not daily and in the same manner restored, as it was lost ; and also if the quantity which the age requires for a due increase of the body was not added. Certainly the firmness is diminished in the bones of the ricketty ; all the phenomena of the disease teach this ; and it is not without reason that the decrease of strength in the bones may be attributed either to a too small quantity of the earthy particles required for the firmness of the bones, or to their corrupt union with the other constituent parts of the bone.

We meet with some excellent observations concerning this matter in the celebrated *Boerhaave* *, where he treats of the solvent power of simple water; which not only dissolves pure terrestrial bodies, but if they are corroded by acids, they may be diluted in water, even so perfectly that the liquor will appear very transparent. In like manner, those real ultimate earths of animals, flesh, bones, testacea, &c. may be dissolved in acids, and these solutions may be diluted in water, and thereby a very pellucid liquor produced.

But the contrary happens when earthy bodies are intimately united with alkaline salts; for the earth united to these cannot afterwards be dissolved or diluted in water. Glass evidently proves this, which consists of an alkaline salt and earth intimately conjoined; and becomes the less dissolvable in water in proportion as these two bodies are more closely united together: for thus a substance is formed which resists the dissolvent property of water more than any other. This great man therefore believed, that the author of nature had created all the aliments of animals, excepting a very few, of an acescent nature: for so the acid salts predominant in the first passages, more happily dispose the nutriment taken to a dissolution, the firm parts of which chiefly cohere together through the earth they contain, and therefore would be far more difficultly converted into liquid chyle: but, when a matter fit for fastening the solids together is afterwards to be formed from this chyle, then the acescency which was necessary for preparing the chyle is totally lost, and an alcalescent salt is produced, which seizing on the terrene particles forms a substance not to be dissolved by water, but capable of propelling the humours: From all which circumstances he finally thus concludes: *Utique, quando vis mutandi acescentia in alcalia in corpore humano deficit, ossa tum, cartilagines, dentes, ligamenta, laxa, debilia, mollia, flexibilia, redduntur;*

ut

ut in Rachiticis animadvertitur quotidie: “ Likewise
 “ when the power of changing acids into alcalies
 “ fails in the human body, then the bones, gristles,
 “ teeth, and ligaments, are rendered lax, weak,
 “ soft, and flexible, as may be daily observed in
 “ ricketty children.”

The thorax pressed to the sides, &c.] Where
Glisson † describes the signs of the rickets which ap-
 pear before dissection in the bodies of those who
 have died of this disease, he remarks the following
 appearances about the thorax: *Pectus exterius ma-*
crum, & valde angustum, præsertim sub alis, & a
lateribus quasi compressum conspicitur; sternum vero
nonnihil acuminatum, instar carinæ navis, aut pectoris
gallinæ. Costarum extrema, quibus cum cartilaginibus
sterni committuntur, nodosa sunt, quemadmodum de ar-
ticulis carpi & tali diximus: “ The breast is ob-
 “ served externally lean and very narrow, and as it
 “ were flattened and compressed, especially under
 “ the armpits, and on the sides; but the sternum
 “ somewhat sharpened like the keel of a ship or the
 “ breast of a fowl. The ends of the ribs by which
 “ they are affixed to the cartilages of the sternum
 “ are knotty, exactly in the same manner as we
 “ have described the joints of the wrists.” For the
 boney ribs have not the requisite firmness; hence
 they are easily pressed inwards when the nurse, with
 her hands applied to both sides of the child, raises
 it from the ground, or carries it in her arms. It is
 in some places customary not to seat a child some-
 times upon the right, and then on the left arm, but
 on a horse-hair cushion tied round the loins of the
 mother or nurse, whilst both hands are applied to
 the sides of the thorax to prevent the child from fal-
 ling on either side, and to keep it in an upright po-
 sition with the legs hanging down. But when the
 sides only are pressed, the column of the vertebres
 will give way backwards, and the bones of the ster-
 num

† De Rachitide, Cap. II. p. 11.

num will be elevated forwards; and as the vertebres afford most resistance, the bone of the sternum will rise the more upon that account; and thus the cavity of the thorax be rendered narrower when the sides are compressed, and the lungs more difficultly dilated in inspiration; whence an asthma and other dangerous diseases of the breast so often ensue, and this disease so easily turns to a consumption if of any long continuance. Hence it is stated * in the prognostics of the rickets, *Asthma (præsertim Orthopnœa, atque ea spirandi difficultas, in qua decubitus in neutrum latus admittitur) valde periculosum: Ante obitum tabem sibi comitem perpetuo fere adsciscit, nisi forte alius morbus aut symptoma grave interveniens, accelerata morte, tabem adventantem prævertat:* “ that
 “ an asthma (especially an orthopnœa, and that difficulty of breathing which permits not the patient
 “ to lie on either side) is very dangerous; it constantly for the most part before death brings on a
 “ consumption, unless some other supervening disease or fatal symptom prevents it by a speedy
 “ death.”

The abdomen projects outwards.] This was treated of in Sect. 1485, No. 6.

Rotten black teeth.] As the rickets frequently attacks the patient about the time of cutting the teeth, the first teeth are usually badly affected, and even the second teeth also if the disease has continued any length of time. So that I have seen some youths who had been negligently treated in the beginning of this disease, continue toothless during life: indeed this but seldom happens, but it is oftener observed, that through a severe disease some of the teeth are wanting, particularly of those called the *incisores*; some of which, however, are renewed about the seventh year, or sometimes later, when the first, called *lactei* or milk teeth, usually fall out; for when the disease is violent, and of a long continuance,

tinuance, as the bones are severely affected, it is no wonder that the teeth are in like manner affected. Under the adamantine shell, or enamel (so called), which projects above the gums, is concealed a more tender boney substance, which when corrupted the tooth crumbles to pieces. *Gliffon* * observes, that when dentition is joined to the rickets it very much accelerates the progress of the disease: and he also says, *Dentes nigrescere, aut frustillatim excidere, periculo non vacat; atque id eo pejus est, quo tardius alii in eorum locum succrescunt*: “ That when the
 “ teeth grow black, or crumble to pieces, the child
 “ is not void of danger; and that it is still the more
 “ dangerous the longer time that others take in
 “ springing up in their places.” For a physician may from this circumstance learn that the disease is violent, if the second teeth still lurking in the sockets have been affected by the first decayed teeth placed over them, or at least, that it will more difficultly yield to the prescribed remedies, and be more slowly eradicated. The famous *Buchner*, already mentioned †, has observed, *A dentibus oriri morbum*; unde, *si infans serius, post primum annum, v. g. anno uno & dimidio, aut quadrante, aut plane expleto jam annorum binario, dentes edat, utut antea vegetus & alacris fuerit, metuendum est, ne in spinalem morbum incidat, sive convulsiones dentitioni accedant, vel non. In Rachitide imperfecta dentes, carie ejecti, septimo anno reperiuntur, in perfecta vero non*: “ that
 “ the disease begins in the teeth; whence, if an in-
 “ fant cuts its teeth late, viz. after the first year,
 “ in a year and half, or three quarters, or at the
 “ expiration of two years, though he had been be-
 “ fore robust and lively, it is to be feared, that he
 “ will fall into the spinal disease, whether convul-
 “ sions accompany dentition or not. In the imper-
 “ fect

* De Rachitide, Cap. XXIII. p. 287, 288.

† Disputat. ad morb. histor. opera Halleri, Tom. VI. p. 286, 287, 288.

“fect rickets the carious teeth are supplied by new
 “ones in the seventh year, but not in the perfect.”
 It is to be remarked, that this author calls that the
 perfect rickets, when no hopes remain of curing the
 disease: *Rachitis imperfecta difficulter, perfecta vix aut
 raro curatur. Saltem, oblata licet occasione, curam pe-
 riclitari noluit*: “The imperfect rickets is with dif-
 “ficulty cured, the perfect, seldom or never. At
 “least he would not hazard a cure, though an op-
 “portunity offered.” Which sentiment, however,
 cannot be commended, as patients have often reco-
 vered from this and other diseases, though given over
 by all who saw them.

But he observed, that the disease commonly
 proved fatal, if a remarkable stench of the mouth
 accompanied the caries of the teeth. Moreover he
 has confirmed * that prognostic of Glisson concerning
 the slow eruption of the new teeth in a ricketty child;
 for the first teeth were cut slowly, and with almost
 continual convulsions; then all the signs of a com-
 mencing rickets declared themselves; the teeth be-
 came yellow, then black, and dropped out, so that
 the child lived for five years toothless; one tooth
 sprung up in the eleventh year of its age, which re-
 mained until death put an end to its miserable life
 in its fourteenth year. A copper-plate, annexed to
 this dissertation, exhibits the wonderful deformity of
 a body so long affected with the rickets.

For though ricketty children often fall much sooner
 victims to this disease, yet many recover from it; but
 they are deformed, and lead a miserable life, almost
 incapable of every kind of occupation, unless pro-
 per remedies are in time applied; which will be here-
 after treated of. Hence Glisson, † treating of the
 prognostics of this disease, thus says: *Qui statum
 morbi attingunt, quo nempe is non amplius augetur,
 omnes, si recte tractentur, evadunt, nisi forte alius mor-
 bus*

* Disputat. ad morb. Histor. opera Halleri, Tom. VI. p. 280.

† De Rachitide, Cap. XXIII. p. 287.

bus sit conjunctus, aut casu aliquo superveniat, ægrumque in augmentum ulterius deturbet. Declinatio symptomatum similiter, sed certius, sanitatis restitutionem pollicetur: “ All those who reach that state of the
 “ disease, wherein it appears to be at a stand, escape
 “ if they are rightly treated, unless some other disease
 “ is by chance complicated with it, or accidentally happens, and hurries on a farther augmentation thereof. A declension of the symptoms
 “ in like manner, but more certainly, promises restoration of health.”

Which, daily increasing, often leave similar pernicious diseases during life, chiefly the spina ventosa, and a caries of the bones.] It was before demonstrated, that the bones have not a due firmness in ricketty bodies; hence they retain not their natural situation and figure when they are press'd by the incumbent weight of the body in an erect posture; whence the spina dorfi is so often deformed, and also the inferior extremities: the same happens in the superior extremities, when these little patients, in a constant sedentary position, or as they lie in their beds, strive with their hands and arms to change the situation of the body, which, if it remains for a long time in the same posture, begets an uneasy sensation even in sound and robust men: whence it is also observed, that the healthy sometimes as they sleep change their posture, to remove the uneasiness they feel from a long pressure of the body on a particular part during the time of sleep. For unless this change of situation was now and then obtained, the circulation would be stopped in those parts we lie on, and a gangrene would ensue in the parts thus exceedingly compressed; as physicians lament is frequently the case when stupid and soporific patients feel not that uneasiness, and their nurses, though advised to shift them from side to side, are negligent in performing that duty. But as a perfect exercise of the senses still attends ricketty children, these miserable

ferable little creatures the more frequently use their hands to change their position of body ; hence the epiphyses of the radius, ulna, and os humeri protuberate, and the middle parts of the bones between the joints, wanting a due firmness, begin to be incurvated. The action of the muscles affixed to the bone might also change the natural figure of these bones, which are excessively flexible in this disease : but it before appeared, that the amplitude and strength of the muscles are diminished, and that their activity decreases in the rickets ; whence this is perhaps to be less dreaded, for the preceding reason ; but when their lost strength is by a happy cure restored to the muscles, and a firmness also gradually succeeds in the bones, then the figure of these incurvated bones is often amended by the sole power of the muscles affixed to them. This matter will be more fully displayed when we come to the cure of this disease. *D'Aubenton*, who was very accurate not only in describing the structure of the human body, but was incomparably curious in that kind of anatomy usually called *comparative*, which describes the parts of animals, and compares them with the human parts of the same names, whereby the knowledge of all the functions is much enlightened, (in his description of the most precious museum of natural history, * the care of which is committed to him, and in the discharge of which duty he has acquitted himself with so much reputation) describes many specimens, some also by very accurate drawings, which evidently teach us in what a wonderful manner the human bones may be changed in this disease ; and even how the very substance of these bones is at length sometimes miserably destroyed. But as the morbid state of the bones can be more accurately observed in dry bones, he therefore has described and deli-

* *Histoire naturelle avec la description du Cabinet du Roy*,
Tom. III. p. 57, & suivantes.

delineated some skeletons, in which the bones remained annexed to each other by their own ligaments. All these things deserve to be attentively read and considered.

Buchner,* has delineated a girl who, for fourteen years, was affected with the rickets before she died of that disease. In this figure appears indeed a very great deformity of the limbs, but the state of the bones still covered by the soft parts is not seen; but in the dissection of the body of the same girl † we thus read: *Supra modum molles & scissu faciles cartilaginee erant. Ipsa vero ossa cartilagineam naturam, & mollitie, & facie ipsa, æmulata sunt. Cultro anatomico absque vi totum os femoris discidi. Articuli a naturali sua constitutione, uti totum corpus, degeneraverant. Ita contracta & collapsa pelvis ossa erant, ut digitum ano immissum vix admitterent, atque ut inde tota vesica in abdomen expulsa peregrinaret. Cavum ossium fistulosorum ex binis oppositis lateribus admodum compressum erat, ut cavitas cylindrica in planam & paralelogrammiformem mutata esset*: “The cartilages
“ were beyond measure soft, flexible, and easily
“ divided. The very bones themselves resembled
“ cartilages, both in appearance and softness. I cut
“ the thigh-bone through with a dissecting knife
“ with all imaginable ease. The joints as well as
“ the whole body had degenerated from their natural form. The bones of the pelvis were so
“ contracted and collapsed, that they would hardly
“ admit of the introduction of the finger up the anus,
“ and thereby the whole bladder was forced out into
“ the cavity of the abdomen. The cavity of the fistulous bones had been so much compressed on the
“ opposite sides, that their cylindrical cavity had
“ been changed into the form of a parallelogram.”
D'Aubenton ‡ also observed like wonderful deformities in the bodies of persons who died of the rickets,
but

* Disputat. ad morb. Histor. opera Haller, Tom. VI. p. 300.

† Ibidem, p. 281.

‡ In loco citato, p. 74, 75.

but they were so various, that he despaired of giving an exact description of them, though the bones of this skeleton, connected by its real ligaments, remained in as natural a situation as possibly could be expected. Whence he thus finishes his account of this skeleton: *Uno verbo dicam, pleraque ossa complanata fuisse diversimode secundum illorum longitudinem.* "I shall, in one word, say, that the bones were, for the most part, flattened divers ways, according to their length." This skeleton was three feet, two inches, long: though from the dimensions of one of the bones, and from observing the progress of the ossification, the patient had probably been subject to this disease for eighteen or twenty years before it proved fatal. It was before remarked in §. 1316, where difficult labour was treated of, that the midwives always dread a difficult labour, when they assist those lying-in women who, in their youth, had laboured under the rickets; especially if any remarkable deformity remains about the ultimate vertebres of the loins, and the bones which constitute the cavity of the pelvis; which may not only cause a difficult labour, but sometimes also a total impossibility of excluding the infant. See what has been farther said in that section.

Similar inconveniences may arise from the same cause, when the cavity of the thorax is straitened through the deformity of the back bone, so that the lungs cannot be freely expanded; whence troublesome and perpetual coughs, an incurable asthma, an incredible anxiety, the face livid, and swelled by an increased or slight motion of the body, imposthumes of the lungs, an incurable consumption, hard schirruses, and adhesions of the lungs with the pleura, ensue; as appears from the preceding observations.

But wonderful defects have also been observed in the rest of the bones of the body. *D'Aubenton* †, in the ricketty skeleton just now mentioned,

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tioned,

† In loco citato, p. 74.

tioned, cut through a part of the occiput and ossa parietalia, and found the parietal bones, in some places, half an inch thick, but so thin in others, that light might be seen through them; he found also such thin places in the bones of the forehead, of the temples, and in those of the hinder part of the head. Quere, are such thin places found in the bones of the extremities? in which danger of a fracture is to be apprehended from the least force. In another skeleton, whose figure he shews in an annexed * copper-plate, marked with the letter E, appeared the traces of some joinings, as it were, all round the circumference of the middle parts of the bones of the radius, ulna, arms, thighs, tibia, and fibula; and even some similar traces appeared in the ribs. This famous man doubted whether these were not the traces of fractures consolidated by means of a callus. The difficulty which seemed to oppose this opinion was, how so many bones could be broken in this body, and the fractures be again so well consolidated. He was, therefore, more willing to believe that they were to be attributed to the rickets: and that this disease, which so disturbs the growth of the bones, had inverted the natural order of ossification, which begins in the middle, and proceeds towards the extremities of the bones; but, that in this disease, the middle part of the bones had remained a long time cartilaginous, whilst the ossification had, in the mean time, begun to proceed from both extremities towards the middle; and that both these ossifications, which began from the extremities, meeting in the middle, might have produced those traces of the joinings; nay, formerly, before the bones had become intirely hard, they might have been bent in the middle, particularly in early infancy.

From whence he infers, that if a mother of such an infant, in the time of her pregnancy, had seen a malefactor broke on the wheel, the infant born rick-

etty,

* Disputat. ad morb. histor. opera Halleri, Tom. VI. p. 76.

etty, with the bones flexible in the middle, would afford a specious argument for those who endeavour to defend the power of the imagination of the mother on the foetus contained in the womb.

But it is worthy of observation, that the rickets is seldom or never a disease born with the foetus, as has been supported by many arguments in §. 1481; and though the foetus were already infected by this disease, in the mother's womb, the disorder could not have gathered such strength, in the early period of time after nativity, as to occasion so many broken bones. For the whole history of the disease teaches, that the rickets begins its attack later, and makes a much slower progress.

But several authors have taken notice, that the bones are easily broken in ricketty children. The celebrated *Petit**, where he treats of the morbid change of the bones in the rickets, says, that the os humeri is indeed scarcely changed in figure, as it is every where girded with muscles which are of almost equal strength, neither is it obliged to sustain the weight of the body like the os femoris; yet he remarks, that when the bones have been already much softened by the disease, then in the part where the deltoid and anterior brachial muscles are inserted, the os humeri is so incurvated, that the anterior part becomes convex, and the posterior concave: *Verum sæpiissime in hoc loco os invenitur semifractum; quod pluribus vicibus viderat. Hoc infortunium non tantum ossi humeri accidit, sed sæpe etiam costis, uti & mediæ parti ossium femoris & crurum.* “ But the bone is
 “ very often found half broken in that place; which
 “ he had frequently seen. This misfortune not
 “ only happens to the os humeri, but often also to
 “ the ribs, as also to the middle parts of the bones
 “ of the thighs and legs.” *Buchner* † observed, that the thigh bone was broke, by a very slight
 K k 2 stroke,

* *Traité des maladies des Os*, Tom. ii. p. 547, 548.

† *Disputat. ad Morbor. Histor. opera Halleri*, Tom. VI. pag.

stroke, in the latter days of a girl who died of the rickets, in the sixteenth year of her age, though she was not able to sit, much less walk, in the ultimate stage of this disease. Another girl, who was suckled almost two years, and perfectly healthy during that period of time, afterwards became ricketty; and, in the third year of her age, by only running in the street, broke her thigh bone; and though that fracture was found consolidated, upon dissecting her body after her death, which happened in the tenth year of her age, yet she was, by the violence of the disease, deprived of the power of walking, in her life time, after that fracture.

I believe these circumstances are sufficient to prove, that the diminished solidity of the bones, in this disease, often occasions fractures of these bones. Besides, it is worthy of notice, that the epiphyses of the bones grow protuberant at the joints, (vide §. 1485. No. 8.) whence all the bones generally swell about their joints, as *D'Aubenton* † has observed in the skeletons of ricketty persons; particularly, the bones of the thighs and legs labour under this defect at their joints; nor have the cavities of the joints an amplitude large enough in proportion, to receive the head of the articulating bone, as its bulk is increased by the disease: hence arises danger of an easy dislocation of the joint; which perhaps more frequently happens in the rickets than is believed. Whilst *Glisson* ‖ recites the prognostic signs of this disease, he, amongst others, observes: *Qui crura sursum trabunt, neque ea lubenter extendi patiuntur, difficulter curantur.* “Those who draw their legs upwards, and suffer them not to be extended willingly, are difficultly cured.” If the head of the thigh bone enters not deep enough into its socket, in a ricketty child, where the ligaments are relaxed, it easily falls out; and when it has thus slipped out of the joint, it is again drawn upwards by the muscles;

† Histoire naturelle avec la descript. du Cabinet du Roy, Tom. iii. p. 74. ‖ De Rachitide, Cap. xxiii. p. 287.

cles; whereby the limb is shortened, nor can it be extended without great pain. Perhaps this ultimate prognostic also respects this circumstance: *Qui facilius tolerant omnimodam jactationem corporis, cæteris paribus, facilius curantur*: “Those who most easily bear a tossing of the body every way, cæteris paribus, are most easily cured.” For this patience, in sustaining every kind of motion, shews that the joints are not only good, but that the breast is also free; which is a very good sign. Whence these miserable little patients are incapable of moving their own bodies; nor can their situations be changed by others, without danger of an immediate suffocation, when the rickets is far advanced, and a fatal event is apprehended. *Buchner** saw the whole train of such miseries in a ricketty girl, who, in the last period of her life, *integrò pede brevior reddebatur, & magno capite, ac inter elevatas scapulas quasi gomphosi immisso, brachiis & pedibus curvatis mirumque intortis, elevato sterno & eminente abdomine, ex homine in monstrum degenerabat. Tunc, nequidem sedere valens, & brachiis & dorso, miserandum spectaculum! suspendenda erat. Et retro, nisi caput perpetuo mupiretur, mox totum cadebat; quo nempe curvatura vertebrarum colli divertebatur*, “was rendered shorter by an entire foot; had a large head, sunk in, as if fastened by the future called *Gomphosis*, between her elevated shoulder blades; her arms and legs incurvated and distorted in a surprizing manner; the sternum raised up and sharp, and the abdomen prominent; so that from a human being she had degenerated into a monster; being then unable to sit, oh pitiful spectacle! she was obliged to be suspended by the arms and back. And if the head was not perpetually propped behind, it quickly fell backwards: by which means the curvature of the vertebres of the neck was even turned on one side.”

It also seems very greatly to be feared in those who recover from a long continued rickets, lest that be-

sides the deformity of stature, there should from thence remain such a change of the fabrick in the bones, as afterwards may produce bad diseases of the bones, very difficult to be cured, namely a caries, and the spina ventosa.

It has before appeared, that, by the very necessary actions of health, those particles are wasted in a firm and sound bone, and as it were, vanish out of the body, on which the firmness and strength of the bones depend; which, if not restored by the action of the vessels and viscera, from the aliments converted into the nature of the fluid and solid parts of the body, the structure of the bones will degenerate from its natural genius, and at length become morbid, if the same defect remains a long time. But as the whole history of the rickets teaches, that the disease injures the solid parts of the body, particularly the bones, it will not appear wonderful, that traces of the disorder remain in the bones where the disease has been a long time endured; which will manifest themselves upon the recovery of strength and health, and will sometimes require to be separated from the sound parts of the bones; which indeed might successfully be done, if a way was prepared for the exfoliation of the affected bone, by a plentiful suppuration of the soft parts; but this good luck seldom happens, as a great disposition to putrefaction attends this disease when grievous, which sometimes attains such a vast malignity, that *Buchner** saw a miserable girl, who, the last day of her life, *adso tetram ore exspirasse mephitim, a qua sanissimus volucris, caveæ, quæ puellæ vertici perpendicularis imminebat, inclusus, mox enecatus est*, “breathed so
“foul a stench from her mouth, that a very healthy
“bird, in a cage which hung over her head, was
“immediately killed by it.”

But as every thing, that regards this matter, was before treated of, in a particular chapter on the diseases of the bones, in §. 512, and the following, those passages may be referred to.

S E C T.

* Disput. ad morbor. histor. opera Halleri, Tom. vi. p. 279.

S E C T. MCCCCLXXXVIII.

AN D during the whole course of this disease, a slow, slight fever doth consume the body until death; and then do all the fibres, membranes, vessels, and viscera, appear soft, and withered, the humours all dissolved and slimy. So that we may conclude the proximate cause of this disease, to be a sluggish, slimy, cold, and vapid, cacochymy, perhaps with a mixture of a latent venereal virus, together with a very loose fabrick of the solid parts.

The rickets proceeds slowly: and not only makes its progress for many months, but also for years, before it destroys the body; as may be easily collected from what has been before said. For it has been proved by many instances, that the first symptoms of the commencing disease manifest themselves after the first cutting of the teeth; and that a miserable life has been dragged on to the fourteenth or sixteenth year of the patient's age, before death put an end to its train of calamities. But it is to be considered, that many, who are afflicted with the rickets in a tender age, still suffer much longer. *Glisson** remarks, that those who are not perfectly cured before the expiration of their fifth year, afterwards survive as miserable, ailing, creatures, and die asthmatic, cachectic, or consumptive, before they arrive at manhood; *Vel saltem gibbosos, nanos, curvos, aut aliter deformes, postmodum superesse*; “ or they at

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* De Rachitide, Cap. xxiii. pag. 289.

“ least remained hump-back dwarfs, or otherwise “ deformed.” But it is a known fact, that every disease is terminated in a threefold manner: for it either ends in health, death, or turns to another disease different from the former, to which, as the cause, it owes its origin. Thus a hump-backed person is no longer called ricketty, though that deformity of the back may proceed from a preceding rickets: the same is true with respect to other deformities, the consequences of the rickets. But here it is affirmed, that a slow, slight, fever, gradually preys upon the body until death, in the real rickets, though it often ceases, when that disease is afterwards changed into another.

Yet it may be doubted, whether a slight fever accompanies this disease in the very first period of its invasion.

Glisson *, who examined this disease with so much care, confesses as follows: *Adeo lente sensimque obrepit, ut ad plures menses vix sui manifesta vestigia prodant, nisi forte a vehementissimis causis ejus progressus promoveatur, ut a morbo violentiore aut colliquante, seu antecedente, seu superveniente.* “ It steals on so “ slowly, and gradually, that it hardly discloses any “ manifest traces for many months, unless that its “ progress is accidentally promoted by the most vehement causes; such as a very violent or colliquative disease, whether preceding, or coming after.” It is by all agreed, that this slow, small, fever attends the disease when more advanced; but it is *tarditas motus hujus morbi in sua prima invasione*, “ slow “ of motion in the first invasion of this disease.” But the signs of the commencement of this disease in young children, who had not as yet begun to walk, were treated of in §. 1485: where the unusual flaccid state of ricketty dead bodies was also remarked, in No. 5; whereas it usually happens, that those who die of other diseases, grow stiff not only after, but sometimes

* De Rachitide, Cap. cxviii. p. 219. *

sometimes before death also : whence the parents or relations of a dead body pay it their last duty by closing the eye-lids and mouth of it, lest it should be a horrid spectacle, these parts remaining open after death : they in like manner place the head in a right situation, and join the hands. If this duty was too long delayed after death, the body would become so stiff, that this pious work could no longer be executed, or at least not without great difficulty ; but all the joints remain flexible in ricketty dead bodies, and the large head falls, from its weight alone, to this or that side, if not supported.

The humours all dissolved and slimy.] The observations made in the chapter *de morbis viscerum debiliū et laxorum*, “ on weak and lax viscera,” in Section 41, and the following sections, merit attention here, as also the remarks on the diseases of weak and lax fibres, in Sect. 24, and on the similar defects in the vessels, in Sect. 38, &c. for all these also take place in the rickets. It was demonstrated, in Sect. 25, that a defect of the muscular motion is to be deservedly recited amongst the primary causes of the weakness and laxity of the fibres ; it appeared, in Sect. 30, that the fibres are weak in infants, growing children, and such as lead sedentary inactive lives ; in Sect. 35, 2. that the solid fibres, when too stiff and elastic, are amended by rest and much sound sleep in a humid and cold air, for thus they are rendered weaker and softer ; in Sect. 43, 3. that sluggishness of the fluids circulating through the greater vessels, which depends upon the diminished quantity of aqueous fluidity, and languid muscular motion is from thence deduced ; but all these matters are mentioned in the history of the rickets. In Sect. 44, the disorders that arise from a debility and relaxation of the vessels and viscera are enumerated, particularly the *cachexy*, and *cachochymy*, together with their fatal consequences, *consumptions*, *the empyema*, *dropsy*, and *atrophy*, all which are observed in the

the course of the rickets. It was proved, in Sect. 48, that the blood in very robust bodies is excessive dense, tough, and mild, but in very tender bodies dissolved, thin, light, and acrimonious.

All these circumstances therefore conspire together in the rickets to cause a dissolution of the humours, nor has the blood an healthy firm consistence, but only a clammy, glutinous lentor, which has been treated of in Sect. 69, and the following sections.

Observations worthy of credit confirm what has been just now said: the celebrated *du Verney* * affirms, *Carnes Rachiticorum albas, molles, decolores, esse, sanguinem autem aquosum, & valde dissolutum*: “ that the flesh of ricketty children is white, soft, “ and almost colourless, and the blood watery and “ very much dissolved.” *Buchner* † testifies, that in the dead body of a ricketty girl *sanguis summo-pere tenuis, resolutus, & rutilus, erat*: “ the blood “ was extremely thin, dissolved, and florid.”

Wherefore we may conclude the proximate cause, &c.] From the whole history of the rickets, hitherto described, follows the proximate cause thereof, such as is here described. That is called the proximate cause of a disease which directly constitutes the whole present disorder; the presence whereof founds and continues the disease, and the absence of which removes it. For the humours degenerate from those qualities which are required in health, and then a *cachochymy* is said to exist; which may be of various kinds, but is in this disease found to be inert, vapid, and slimy. The fabric of the solid parts of the body here is also too lax, as has been demonstrated; but our humours are so concocted by the strength of our vessels and different viscera, that they acquire the natural qualities required for health; and therefore they gradually degenerate when the strength of the solids is debilitated.

And

* *Traite des maladies des Os*, Tom. II. p. 291.

† *Disputat. ad morb. histor. opera Halleri*, Tom. VI. p. 281.

And it is also proposed by way of a doubt, whether there is not perhaps something of a venereal virus in the rickets, but of the mildest kind.

The celebrated *Astruc* * believed, that the contagion of the venereal disease may sometimes be of a very mild nature, so as to be gradually broke down by the vital powers, and decrease in quantity, and finally vanish totally from the body. But he says, that this happiness is never to be expected unless the venereal virus has been benign, and small in quantity, the blood also pure, and its component parts duly mixed and perfectly elaborated; and if the virus was not in this manner entirely dissipated from the body, he conceived, that part of it might still lurk a long time there, *sed ita coërcitum & refrænatum, ut effectu careat; seu, quod idem est, latebit quidem in sanguine, sed latebit innoxie, quemadmodum in praxi videre obvium est,* “ but so restrained
“ and curbed, as to be incapable of producing its
“ usual effect; or which is the same thing, it will
“ indeed remain in the blood, but will continue there
“ entirely harmless, as may be obviously seen in
“ practice.” But if the blood degenerates from its sound nature by a fever, or any other disease, by errors in diet, loss of rest, a surfeit, &c. *eadem ratione venenum antea latens viribus & copia promte invalescet, naturali ferociæ restituetur; unde Lues manifesta,* “ for the same reason the poison before latent may quickly increase in power and quantity,
“ reassume its natural fury; and hence a manifest
“ Lues.”

He endeavours to confirm his opinion by an argument drawn from uncultivated trees, the fruit of which yields a rough sour juice, but becomes so mild when planted and cultivated in gardens, that its flavour is very pleasing to the palate; but if the hand of the gardener ceases from a due culture of such trees, the fruit returns to its former roughness.

He

* De Morbis Vener. Lib. II. Cap. V. p. 102, 103.

He affirms this to be the case in the venereal disease, which inoffensively lurks in the body : *quamdiu sanguis purior largiorem similis veneni renovationem refrænaturus est ; suæ vero redditur nativæ ferociæ & virulentia, ubi primum depravata sanguinis integritate datur latenti veneno nocendi locus* : “ as long as the
 “ pure blood prevents a renovation of similar poi-
 “ son, but is restored to its natural fierceness and
 “ virulence, when the blood, being first depraved in
 “ its quality, an opportunity offers for the latent vi-
 “ rus to exert its virulence.”

Hence he explains, why the Lues may sometimes follow, when either of a married couple carries the lurking venereal virus in the body, though they have a long time lived together in wedlock totally free from a declared venereal disease. *Id enim supponit, quidpiam ex alterutra parte mutatum fuisse, unde contagium, quod ab infecto viro manat, jam efficacius sit, vel sanguis mulieris, qui inficiendus est, ad concipiendum venenum magis comparatus* : “ For it supposes that
 “ something has been changed in one side or the other ;
 “ from whence the contagion which is emitted from
 “ the infected man becomes now more vigorous,
 “ or the blood of the woman which is to be in-
 “ fected more predisposed for the reception of the
 “ poison.” But as that famous man states, that strumous and ricketty dispositions are symptoms of a degenerated Lues : hence he from the same foundation explains, why out of many children begotten by the same parents, some afterwards labour under the rickets, and several others of them do not. *Id enim arguit, hunc aut illum, nativa corporis constitutione, vel morbis, qui, dum utero gestantur, matrem debilitant, cæteris imbecilliores esse, unde contagio altius inficiatur* : “ This argues, that this or that child,
 “ by its natural constitution of body, or from some
 “ disease that debilitates the mother during preg-
 “ nancy, is weaker than the rest ; whence it is
 “ more deeply infected with the contagion.” But it
 has

has appeared from the history of the venereal disease, that the most perfect and robust health weakens not the virus received into the body; but on the contrary, that the healthiest youths who are most full of juices are the worst infected by impure venery. Nay if any part of the venereal contagion still lurks in the body after a cure has been attempted, all the symptoms of the disease are hushed and lie dormant as long as the miserable patients languish, and are exhausted by rough mercurials, and a severe course of diet; but the symptoms again repullulate, as soon as the body is filled with good nourishment, and the strength has returned; and sometimes the cure must be repeated. Besides, the symptoms of the venereal disease are entirely different from those which accompany the rickets, as may be seen in Sect. 1482.

But the celebrated *Astruc* seems, in the second edition of his most finished treatise *de Lue Venerea*: “on the venereal disease,” to have more accurately determined what he thought concerning the venereal disease, as a cause of the rickets. For although we read what I have just now recited in the fifth chapter of the second book, yet we meet with some things in another place * which are not found in the first edition. Where he treats of the various periods of the venereal disease, he says, that he in silence had prudently passed over not a few of those kinds of new diseases which are by many persons believed to be bred or revived by the venereal disease; and he afterwards subjoins, that numbers have imagined, that the rickets proceeds from the same fountain. *Sed qui ita putant semper chorda oberrant eadem; scilicet probant quidem egregie virus Venereum degener producendæ Rachitidi symbolum conferre, ut & producendis non paucis morbis aliis: probant vero minime, venenum idem esse conjunctam & adæquatam causam*

* De Morbis Venereis, Lib. I. Cap. XIII. Tom. I. p. 101, 102.

causam Rachitidis ; cum certum sit Rachitide sæpius tentari infantes plurimos, quorum parentes omni Luis Venereæ contagio perfectissime semper vacavere : “ But
 “ those who are of that opinion always touch the
 “ wrong string ; they indeed excellently prove, that
 “ a degenerate venereal virus conduces towards the
 “ production of the rickets, as also towards the pro-
 “ duction of many other diseases ; but they do not at
 “ all prove, that the same virus is a conjunct and
 “ adequate cause of the rickets, as it is certain, that
 “ many children, whose parents have always been
 “ perfectly free from the venereal disease, are often
 “ attacked by the rickets.”

It therefore does not appear, that the venereal disease can be enumerated amongst the causes of the rickets ; as it is certain, that this disease arises in infants without any suspicion of a venereal contagion previously communicated.

This opinion is farther confirmed, because the rickets demands a very different cure from that of the venereal disease ; and also because those remedies which are recommended for the extinction of the venereal virus cannot in the least prove serviceable in this disease. For *Glisson* * says, *Observavimus, pueros nonnullos, unguentis mercurialibus illitos ad necandam scabiem, in hunc postea morbum incidisse :* “ We
 “ have seen some children rubbed with mercurial
 “ ointment to kill the itch, who have afterwards fallen
 “ into this disease.”

It now remains that something may be said of the cure of the rickets.

* De Rachitide, Cap. XVI. p. 188.

S E C T. MCCCCLXXXIX.

IT is best cured by a light dry diet, not fat, of easy digestion, seasoned with the mildest spices, given often, but always in a small quantity : By generous liquors drank in moderation, either wine, or well brewed beer, not stale, but of the nature of Brunswick mum : By a dry and warm air : By dry warm woollen clothing in preference to any other. By lying upon mattraffes filled with aromatic, strengthening, drying herbs, placed upon a wooden bedstead in the highest and driest apartment of the house : By tossing, shaking, swinging, dancing them, or by letting them ride in a coach up and down over the stones, to shake their bones and bowels, and thereby to strengthen them : By repeated, hot, dry frictions with flannels, or fumigations with the smoak of aromatic herbs principally applied to the abdomen and back-bone : By blistering them sometimes, and giving gentle but repeated vomits, though with due prudence : By purging them for some days successively with rhubarb, or some other stomatic purge : Lastly, By a long continued use of corroborant, drying, antiscorbutic, and exhilarating medicines. It is a query, Whether the cold bath would not prove advantageous to them, and whether any good can be done with any kinds of liniments ?

It is manifest from what has been hitherto said of the rickets, that the structure of the solid parts of the body is very lax, and wants due elasticity and strength; whence almost all those things which were advised before, in Sect. 28, for the cure of the solid fibres over-weakened and relaxed, are generally conducive to a cure here also; except that for curing the rickets, rather drier food is usually recommended, so that physicians advise ricketty patients to refrain from the use of milk, panada, and broths, and advise in preference thereto a drier diet.

By light dry food of easy digestion, &c.] Those aliments which are easily digested, and have nothing glutinous in them, are made choice of, and thence are the more readily concocted by the force of the chylopoietic vessels, and changed into good chyle, It was remarked, in Sect. 1486, No. 3, that the appetite and digestion remain unimpaired in this disease, which otherwise could not be so long endured. Yet these aliments are given in a moderate quantity and often in the day, lest a large quantity of chyle should load the lungs, more or less pressed on account of the change in the cavity of the thorax. See Sect. 1487. Every thing that is fat is forbidden in the victuals of ricketty children, because too great a softness and debility of the solid parts already exist; and it is justly to be feared, that this kind of nourishment may degenerate, in debilitated habits, into a rancid acrimony, which is the worst of all others.

The aliments which particularly conduce to health in this disease are recited at this number in the *Materia Medica*.

Bread, well fermented and thoroughly baked, is principally recommended, for flour is of a remarkable clammy nature, which is corrected by fermenting the paste or dough made of flour and water, and raising it into a greater mass, before it is put
into

into the oven, and baked into bread. Robust bodies, exercised by hard labour, can bear these lumps of dough, made of flour and water, when made into puddings, or bread made without a previous fermentation; but weaker persons, and those who are obliged to get their living by sedentary trades, miserably languish from such glutinous food. Bread thus well prepared and baked, is cut into thinner slices and again baked in the oven; from whence it is called double-baked, or biscuit-bread; which is then very dry, and may be preserved a long time from contracting any moisture or mouldiness from the humid air, when closely shut up in wooden casks. It is known, that the most healthy food given to seamen on long voyages is biscuit-bread. The biscuits for the ricketty should be made of the purest wheat flour, with some pleasant corroborant spices or seeds mixed with them, but in a sparing quantity, that they may have a more pleasant taste, and excite the languishing strength by a gentle stimulus. Children are fond of such biscuits on account of their pleasant taste, for they are immediately penetrated and softened by the saliva, so that they seem as it were to melt entirely in the mouth, and thus afford a very useful nutriment, which is also very soon and easily digested by weak stomachs. Moreover, as the cutting of the teeth is often slow in this disease, and those teeth which first appear become rotten and crumble to pieces; these thin biscuits are therefore convenient for those who want their teeth, because they are immediately softened in the mouth. It is hardly credible, how very beneficial this bread is to the ricketty. I remember to have often seen the disease cured by this alone in its commencement: whence the Dutch bakers shops abound in a variety of these biscuits, with which careful mothers commonly indulge their darling children.

Lean flesh meats of the animal class, particularly the younger sorts, are allowed, but either roasted or

boiled; the outside brown or crust, produced by the force of the fire, together with some of the meat, dressed in its own juices, immediately beneath the outside which prevents the exhalation of the finer particles, is taken off and minced with biscuit seasoned with a little salt and the mildest kind of spices; and thus a savoury meal is prepared which may also be profitable to those who want their teeth.

There are also some very pleasant dishes made of the products of ceres and raisins boiled till soft in water, to which a little wine is afterwards added with some of the milder aromatics.

By little drink well brewed, &c.] Beer is principally recommended in this case as a very antient kind of drink: for various nations, to whom nature has denied the culture of the vine, have devised no unpleasant potable liquors for themselves by brewing of corn with water, that allurements to drunkenness might no where cease: whence the Egyptians, taught by Osiris, made a drink of barley, of a flavour little inferior to wine, which they called *οἶνον κριθῶν* “wine of barley.” But though a similar drink may be made of wheat, and the other products of Ceres, that name still for a long time remained in use: hence it is usually called beer and ale; *a Cerere, id est fruge, vocata: est enim potio ex seminibus frumenti, vario modo parata: ** “So called “from ceres, that is from corn, for this drink is “made of the seeds of corn prepared in various “ways:” whence it was also called the wine of Ceres all over the septentrional parts of Europe: for provident nature, the culture of the vine ceasing there, on account of the inclemency of the air, gave plenty of corn with a liberal hand to the inhabitants of those countries; from whence they might not only furnish themselves with aliments in abundance, but

* Videatur de his Nonnius de re Cibaria, Lib. IV. Cap. XVI. & XVII.

but drink also, like wine, neither unwholesome nor disagreeable. *Tacitus*, treating of the manners of the Germans, testifies, that they had used this drink from the remotest ages. *Potus humor ex hordeo, aut frumento, in quamdam similitudinem vini corruptus*: “ Their drink is the juice of barley, or corn, fermented into a certain similitude of wine.”

It is known, that all kinds of corn abound in such a substance, that men, and the most part of animals, may be commodiously nourished by it: but in all grain there is more or less clamminess, which is divided and thinned by the fermentation excited in dough made of corn; but when this corn is prepared for making of beer, another artifice is used to correct that glutinous quality.

The barley is first steeped in water until it swells; then a germ or sprout buds out in every grain of it; when so germed, it is dried by the help of fire in a kiln constructed for that use: this can be seldom accomplished without the assistance of fire, and in the summer months only, in the heat of the day; it then is turned up often in the day upon a high boarded loft, that all the humidity left from the steeping may be evaporated, and the commenced germination be stopped; for if that should proceed much farther, the germ of the plant quickly growing would consume the nutritive part, which is contained in every single grain of corn, and ought to enrich the beer brewed from it. It is a matter of great importance, in making malt, to observe nicely the time when the commenced germination has sufficiently attenuated the mealy part of the corn, that the germ which lurks in it may begin to be unfolded and grow; yet the increase of the germ is not to be assisted longer by the heat and humidity, lest the mealy part of the corn, on which the strength of the beer depends, should be too much consumed; wherefore a farther germination is obstructed by drying the corn. Barley, wheat, and other kinds of

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corn,

Corn, used for making various kinds of beer or ale, no longer retain their names after they have undergone this commenced germination, but are generally called *maltum*; “malt.” *Aëtius* * called it *Bōvuv*; *est autem hordeum madefactum, deinde cum enatis ligulis tostum*: “but it is barley first moistened, and “then roasted with its budding blades:” hence the brewers hire men well versed in the art of making malt, and give them good salaries, unless they rather choose to attend this work themselves.

This malt is broken in a mill so as to produce a coarse kind of meal, which is infused in scalding yet not boiling water; the liquor, strongly impregnated with the substance of the malt, is afterwards more or less boiled according as the beer is required to be stronger or weaker, which is drank at meals thus new, or after it has acquired from fermentation an inebriating power, and a spirituous fragrance, when it ought to be used with great caution, for if drank to any excess it brings on a more durable drunkenness than is observed to proceed from wine. *Pliny*, astonished at this matter, exclaimed, *Heu mira vitiorum solertia; inventum est, quomodo aqua inebriaret*: “Alas, how wonderfully ingenious is vice; a method has been discovered of “making men drunk with water!”

The kinds of beer or ale, recommended for the ricketty, are not fermented, but are exceedingly saturated with the nutritious substance of the corn, so that they are deservedly called potable meats, can hardly be brought to ferment on account of their great density, unless they are first diluted by a farther addition of water; for though in the preparation of beer, as has been before said, the malt is not boiled but infused in water scalding hot, and mixed therewith by perpetual agitation, that the substance of the corn may be diluted in the water, yet that infusion is afterwards boiled when drawn off from the grains,

* Tetrabib. 3. Serm. 2. Cap. XIX.

grains, and is thickened at will; whence the price of such beer rises according to its degree of strength and thickness. Such beer is excellent whilst new, or wort; for old beer after fermentation becomes very clear, deposits a sediment, and acquires a vinous fragrance; but it is also rendered inebriating, and may be kept for many years. *Brunswick mum* has obtained great fame amongst the different sorts of beer useful in this case; which is so thick, that it may be called a liquid extract of corn. But as a certain quantity of fluid is required to produce fermentation; hence *mum*, as it is highly saturated with the substance of corn, remains unchanged though carried to distant places. It is carried to the East Indies; and I have tasted it when brought back from thence, and found it still unchanged. It is easily understood, that these kinds of beer thus brewed are not fit to quench thirst, but they possess a remarkable strengthening and nourishing quality. One ounce of such beer is usually given, with the biscuit, before recommended, three times a day, with excellent effect, to persons labouring under the rickets. The English or Dutch strong-beers are not so thick as the Brunswick mum, but have a more pleasant flavour; wherefore they are recommended in the *Materia Medica* in hot weather, when weak diluting liquors are most grateful to every body, diluted with an equal quantity of Spa or some other chalybeate water. It seldom happens, that young children are brought to the use of such drink; for beer mixed with water loses much of its sweetness, and still more if mixed with medicinal waters. Wine and water mix together far better. An astringent but ripe mellow red wine is preferable as a medicine, if taken with biscuit.

But Hippocras, the wine so called, is prepared by infusing four ounces of cinnamon, cut very fine but not pounded, in six pounds of choice Rhenish wine; let the ingredients stand in infusion without heat in

a glass vessel close covered, for twenty-four hours, having also added as much sugar as will sufficiently sweeten it; then the wine, thus rendered medicinal, is strained through a flannel bag shaped like a cone, which by chemists is called *Hippocrates's sleeve*, and kept in bottles well corked.

Thus a most grateful remedy is prepared, which contains only the most subtil fragrance of the cinnamon; let half an ounce of it only, with biscuit, be given three or four times a day.

A similar kind of drink may also be made of other wines; instead of Rhenish wine may be substituted red Florence, French claret, or the Greek black astringent wines; for such wines contain a large quantity of spirit, and have a corroborant quality.

[By a dry and warm air.] It was said in Sect. 1484, that infants which are exposed to cold and moisture are seized with the rickets, particularly if they are weakened by warm bathing, fomentations, or humid vapours. It has been manifested, in Sect. 1488, that the proximate cause of this disease consists in an inactive, slimy, cold cachochymy, conjoined with a loose fabrick of the solids; from hence it spontaneously appears, that a dry and warm air is useful, because it is opposite to the nature of the disease; yet great heat both enervates and weakens, as the most robust men experience; and if dryness is not at the same time also joined to a moderate heat of the air, it can be in no way whatever profitable, for the relaxation of the solid parts is promoted by a moist warm air, and the disease suddenly increases. Those who inhabit the sea shores are taught by experience to bask their ricketty children in the warm sun, on the tops of sandy hills, to their great advantage, particularly in the spring when the weather is serene. *Buckner** remarks, that a girl, who

† Disputat. ad morbor. histor. opera Halleri, Tom. VI. p. 280.

who lived ricketty until the age of fourteen years, at last sunk under this disease, after a long preceding southern constitution of the air had increased all her evils. He observed in another ricketty child*, that its feet were more capable of doing their office in summer than in winter, particularly when the weather was dry. But the disease so prevailed during a preceding continued southern constitution of the air, that the child wholly lost the use of its feet: whence he seems, in his prognostics of this disease, to have laid it down as a certain axiom†, that *Austrina tempestas Rachiticis mala; mala hyems. Coelum humidum Rachiticos facit: hinc & morbum auget*: “A southern temperature of the air, and the winter season, are prejudicial to ricketty persons. Wet weather makes children ricketty, and hence also it may increase the disease.”

By warm dry cloathing, &c.] This precept is of great importance; and if observed is remarkably serviceable in the cure of ricketty children. For unless their cloaths are dry, when warmed by the heat of the body they emit a humid vapour, which moistening, further enfeebles the already too flaccid parts: hence I have always advised, that the cloaths when taken off, should be carefully dried and fumigated with olibanum, and mastic, before they were again put on: the same is also to be observed in regard to the bed clothes. Flannel shirts or shifts are preferable to those made of linen; for linen strikes in the trickling moisture: hence it certainly heats the body, but with a humid heat, on account of the cutaneous exhalation struck back; which, when copious, penetrates the linen shirt and wets all the body. Flannel is bibulous, and the thicker the flannel the more moisture it retains before it feels moist to the touch: hence flannel is to be carefully dried before it is

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afresh

* Disputat. ad morb. histor. opera Haller. Tom. VI. p. 284.

† Ibidem, p. 288.

afresh put on: but as the superficies of flannel is rougher than that of linen, a kind of friction is caused by the motion of the body, if it touches it when naked, which is remarkably useful, as will be presently said.

By lying upon mattresses filled with aromatic herbs, &c.] As ricketty children often have the thorax pressed to the sides, and raised up into a sharp ridge at the sternum, hence the lungs are difficultly expanded by the air inspired, and respiration is commonly difficult, particularly when the disease is in an advanced state; whence these miserable creatures cannot without inconvenience lie upon beds and pillows stuffed with feathers; but as almost every where

Neglectis urenda filix innascitur agris:

“ Fern grows for fewel in neglected fields.”

Hence the poorer people usually gather the leaves of fern, or buy them at a very low price, to stuff beds and pillows with for their ricketty children, and the leaves are often used alone, which being of a firm texture, do not easily unite into greater masses by the pressing weight of the patient's body, particularly when first thoroughly dried in the shade: whence they are recommended as very fit for this use.

A description is given in the *Materia Medica*, of the manner of making such beds and bolsters of the leaves of fern, and other grateful aromatic plants, which are ordered to be beaten into powder. Perhaps if the added plants were cut small with a pair of scissars, they would be more useful, for the powder easily clogs together into small lumps from the humidity of the incumbent body, which gives uneasiness to the patient, and the fragrance of the aromatic plants is sooner lost when ground into fine powder, espe-

especially as such little beds must be often dried. But as too great a fragrance might incommode the patient, double the weight of all the herbs together is to be added of the chaff of barley.

When the children are capable of being taken out of bed every day, and of sitting up in their little chairs, these beds may in the mean time be daily dried; but if they are perpetually obliged to lie down, it is useful to have two such beds, on which they may alternately lie, that each of them may be dried.

In the highest apartment of the house upon a wooden bedstead.] We all pass the greatest part of our lives in those places where we sleep, and as a dry and warm air is of service to the ricketty, hence it is proper for them to sleep in the highest room in the house, for the lower apartments are always more or less humid. In summer time, when the sun sets, and even sooner, a moist dew is observed upon the earth, which sometimes ascends to the height of six or eight feet, and renders the lower parts of houses very damp; so that I have often seen the corners and floors of parlours, if of wood, beset with mouldiness and toadstools, and rotting from such moisture. Such air very severely injures those who are ill of this disease; whence appears the necessity of their living, or at least sleeping in the upper apartments of houses. Let these little bedsteads be made of wood, and high, and let the walls be wainscoted, if the parents are able to be at that expence; the boards used for this purpose ought to be perfectly dry, nor should they be painted or varnished; for it is observed, that wood attracts a moisture from the air, and indeed with great power; whence if it cannot be distended with freedom in its whole dimensions it often splits with a great noise; but when wood is covered with oil colours or varnish, then it no more absorbs the water, which in wet weather runs

runs down in streams along the superficies of the wood.

[By being carried, tossed about, swinging, &c.] It was before said, in §. 28. 2, how profitable bodily exercise is in the cure of weak and lax fibres. But every thing there recommended cannot take place in the cure of the rickets; for the muscular force gradually fails in this disease, and all the joints at last become incapable of motion in every respect; so that the poor wretches, to experience the benefit of motion, require the assistance of others, whereby they acquire almost all the fruits of muscular motion without the expence of their own forces.

It is readily understood, that in this case these motions are to be at first gentle, and should gradually become more violent.

Carriage is reckoned by *Mercurialis* * amongst the most delightful and gentlest exercises, and *propterea non solum sanis & valetudinariis, verum etiam longis, ac inclinatis, morbis, & denique iis, quibus lentæ morborum reliquiæ remanent, nec aliter eliduntur, accommodatæ sunt*: “therefore it is not only proper for
 “ the healthy and valetudinarians, but also in long
 “ and declining diseases, and finally to those in
 “ whom some small relicts of diseases remain, nor
 “ are they otherwise shifted off.” *Aretæus* † recommends carriage for persons subject to the cholic, but he orders it to be done in places where laurel, myrtle, and thyme grow; and, according to Petit’s correction ‡, who would have the Greek word τοιόνδε to be changed into the genitive plural τοιῶνδε, because that the fragrance, namely of these sweet herbs, has a certain power of causing good digestion. Certainly carriage in those places where such plants grow may take place in the cure of the ricketty, as they

* De Arte Gymnastica, Lib. VI. Cap. IX. p. 372.

† De curatione morbor. diuturnor. Lib. I. Cap. VII. p. 133.

‡ Ibidem, p. 294.

they for the same purpose are ordered to lie on beds stuffed with aromatic plants, as was before said.

Young children may indeed be carried in the nurse's or maid's arms, but the great softness of the bones requires great caution here; for whilst these sick children sit on the arm, these women usually support them with one hand rested on the thorax, as their own bodies cannot sustain them; whence there is danger of changing the figure of the thorax. Moreover when they sit long on the same arm when carried, the vertebres begin to turn toward one side; hence it is far safer to carry them lying in bed, which, as is well known, may be done various ways. The children of the rich may be carried in an open litter drawn by mules; the common people use little carts for the same purpose, in which ricketty children lie very commodiously, and which are drawn by women. Sailing may also be referred to this head, when the weather is dry and warm; as also hanging beds, such are cradles supported on posts in such a manner as not to touch the ground, which may be rocked by the application of a very slight force without making a noise. Nay the common cradles, fixed upon two circular segments or wooden rollers, answer the same end, except that they are rocked upon the ground, and sometimes hinder children from sleeping by the noise they make when rocked. But all these motions ought to be gently begun, and then gradually but prudently augmented. I have often seen a vertigo arise from a too violent rocking of a cradle, and then a nausea and vomiting. Thus people unused to the sea on board of ships are inclined to a vomiting.

Swinging is deservedly to be recommended. *Mercurialis* thinks * this kind of exercise was called *Oscellæ* by the antients. *Affere funibus quatuor ad laquearia suspensio, & ibi sedentibus pueris aut puellis per aërem jactatis:* “ which were suspended by four
“ ropes

* De Arte Gymnastica, Lib. III. Cap. VIII. p. 215.

“ ropes to the rafters or joists of a house, with boys
 “ or girls sitting therein, who were tossed backward
 “ and forward in the air.” A slack rope is in like manner usually fastened to two trees somewhat close to each other, and children are seated in the middle of it, hanging loose, and then are tossed in the air by their playfellows. The following effects are to be expected from all these kinds of exercises ; namely, that the abdominal viscera, agitated by these concussions, will be fortified, and all indurations and concretions be dissolved ; that the dregs remaining from the ultimate digestion, will be cleansed out of the first passages, as the inflated intestines seem to act less than they naturally ought upon the aliments taken by the ricketty ; finally, that the impetus and efficacy of the air will be increased in the lungs ; and that the ambient atmosphere, quickly rarified by the heat of the body, will be constantly renewed.

Concussions of this kind are not to be attempted upon these tender young bodies but with great caution, and perhaps they never take place unless in the beginning of the disease, when the bones have not yet lost their firmness, or towards the end of the cure, when they again recover the greatest part of their lost strength. The history of the disease has taught, that the bones are so weakened, that they may be broken by even the least force ; for they are inclined to a caries, and a spina ventosa. And though there should be no danger of a fracture, yet the bones might yield to the concussions, and become misshapen ; from whence many and very grievous disorders might happen ; but it appears from the ultimate prognostic laid down by Glisson, * which was quoted before in Sect. 1487, that concussions have been tried in curing the rickets ; for he says : *Qui facilius tolerant omnimodam jactationem corporis, cæteris paribus, facilius curantur :*
 “ Those who with ease bear every kind of tossing,
 “ cæteris

* De Rachitide, Cap. XXIII. p. 290.

“*cæteris paribus*, are the more easily cured.” I readily acknowledge that this is a good sign, but the large head spontaneously nods on every side; the liver, increased in bulk, sticks out beyond the edge of the ribs; and the breast, obstructed by a difficult respiration, is seldom unoppressed in this disease when in an advanced state. Is it safe to shake such bodies? I would advise, that these miserable little creatures should be gently carried in an easy coach hung on springs; but I would have carriage in a little cart along the street rather refrained from, for reasons before mentioned.

By much hot friction, &c.] All physicians who have frequently seen this disease know how much benefit may be expected from frictions. *Asclepiades*, as every body knows, formed the most sanguine expectations from frictions in the cure of diseases. But, as *Celsus* excellently says *, that author discovered nothing but what was comprehended in these few words by that most antient author, *Hippocrates*. *Frictione, si vehemens sit, durari corpus; si lenis, molliori; si multa, minui; si modica, impleri: sequitur ergo, ut tum utendum sit, cum aut adstringendum corpus sit, quod fluens est; aut molliendum, quod induruit; aut digerendum in eo, cui copia nocet; aut alendum id, quod tenue & infirmum est:* “Friction, if violent, hardens the body; if gentle, softens it; if plentiful, extenuates; if moderate, increases its bulk: from whence it follows, that it is to be made use of, when a lax body requires to be braced; or to soften one that is indurated; or to dissipate where the fulness is hurtful; or to nourish that which is weak and infirm.” Therefore let the abdomen be rubbed in the morning, when the stomach is empty, with a flannel impregnated with the vapour of *gum benjamin*, *amber*, *olibanum*, and such like aromatics, which may be kept for this purpose. Such a fumigation may

* Lib. II. Cap. XIV. p. 88.

may be seen in the *Materia Medica*. But as it appeared from the history of the disease, that the liver is increased in bulk so as to project beyond the edge of the ribs, mild frictions only can be applied to the abdomen, lest any injury should be done to the liver. Moreover the intestines, swelled with wind, are gently pressed by this friction, and thus an accumulation of any peccant matter in these cavities is guarded against.

But as the head is generally larger than natural in ricketty children, let light frictions be also applied thereto, but with great caution, as the futures of the skull are very distant from each other, and may be pressed together by strong friction, and thus the functions of the brain be disturbed.

Friction of the whole length of the back-bone is very profitable, yet it must be only a moderate one, for we always ought to be mindful that the bones of the body are softened by this disease, so that they easily lose their natural figure, when roughly handled: the same gentle manner is also to be observed when we try to gradually strengthen the muscular flesh of the superior and inferior limbs. When the disease begins to verge to a better state, the strength of the frictions may be gradually augmented: whence *Celsus* * also says concerning these frictions; *At, ubi totius corporis imbecillitas hanc curationem per totum id exigat, brevior esse debet & lenior, ut tantummodo summam cutem emolliat, quo facilius capax ex recenti cibo novæ materiæ fiat*: “ But where a weakness of the
“ whole body requires friction all over, it ought to
“ be shorter and more mild; so as only to soften
“ the surface of the skin, to render it more apt to
“ receive new matter from fresh nourishment.” For though *Celsus* reposed great hopes in frictions, yet he plainly understood, that some obstacles which disturb health might indeed be removed by them, but nothing was added to the body by frictions, but rather

* Lib. II. Cap. XIV. p. 90.

ther something lost.* *Nam & adstringitur aliquid, eo dempto, quod interpositum, ut id laxaretur, effecerat: & mollitur, eo detracto, quod duritiem creabat: & impletur, non ipsa frictione, sed eo cibo, qui postea usque ad cutim, digestionem quadam relaxatam, penetrat:*
 “For a part will be bound when that thing is taken
 “away, the intervention of which had caused it to
 “be lax; and another is softened by removing that
 “which occasioned the hardness; and the body is
 “filled not by the friction itself, but by that food
 “which afterwards makes its way to the skin relaxed
 “by a kind of digestion.”

Sometimes by a repeated application of cantharides.] The head is of too great bulk in ricketty children; whence those who formerly undertook the cure of this disease, attempted to diminish its size, and indeed by various methods. *Glisson* § mentions, that the English quacks, who treated this disease, scarrified the ears, and hardly hoped for a successful cure without this method. They for the most part applied this scarrification twice or thrice, and that too in the concha of the ear, but they seldom used a lancet, or sharp knife, but did it with a blunt one, regardless of the child's cries. Some also ordered the blood of the right ear, received in wool, to be tied to the left hypochondre, and that of the left ear to the right hypochondre. *Glisson* confesses, that this kind of remedy may not indeed be contemptible, *viderit tamen, absque illius usu nonnullos pueros sanatos,*
 “yet he had seen some children cured without that
 “practice.” To the best of my knowledge, scarification is at present abolished; nor have I ever seen it tried.

Glisson seems to have expected more benefit from issues; and he says, *Hoc solo fere præsidio nonnullos pueros liberatos fuisse novimus:* “We have seen some
 “children freed by almost this aid alone.” For he
 believed

* Lib. II. Cap. XIV. p. 88.

§ De Rachitide, Cap. XXIX. pag. 339, & seq.

believed that it was a powerful remedy, if the issue was cut between the second and third joint of the neck; from which he hoped, that the enormous magnitude of the head would be diminished, the superfluous serum be evacuated, the over-great augmentation of the bones be obstructed, and the too great humidity of the spinal marrow, which he apprehended, be dried away. But yet as ricketty children usually have very weak flexible necks, and nodding heads, such an issue cannot without difficulty be dressed, nor does it cause very little pain: from whence he concludes, *Fonticulum non præscribendum, nisi ea morbi magnitudo sit, ut eam aliis remediis absque hoc satis domari posse vix speremus*: “That an issue is not to be prescribed, unless the disease has taken such deep root that we can hardly hope to subdue it by other remedies.” I candidly confess, that I have never advised an issue to be cut for ricketty children, and yet a cure has been effected, if the disease was still curable.

As an inability of moving the limbs usually comes on, particularly when the rickets has been of long continuance, as was said concerning the cure of the palsy, in Sect. 1069. and that blisters have been recommended as an effectual remedy for exciting motion in paralytic muscles: it is therefore no wonder, that cantharides have been also recommended by some for the cure of the rickets. It was there said, that the blisters are to be applied to paralytic persons upon that place of the back-bone which is just above the affected part; if the person labours under an hemiplegia, the blister should be applied to the nape of the neck; if one of the inferior extremities is paralytic, cantharides should rather be applied to the vertebres of the loins: whence in ricketty children, in whom all the muscles of the limbs languish, the blister should be applied to the nape of the neck; which, for the reasons above mentioned, cannot be done without trouble, and sometimes causes
great

great pain. But we are certain, that motion will return to the muscles in the cure of this disease, if we can by art bring back the plumpness which these muscles have lost by the disease: nor does this appear possible to be expected from the evacuation of the lymph which flows from the vesicles, raised by the blister, when they break. *Glisson* * confesses, that he had not as yet fully experienced the use of blisters in curing this disease, yet he conjectures, that they sometimes may be usefully employed.

But he remarks, that some one of the physicians, who with him enquired into the nature of the rickets, had prescribed, amongst other remedies, a blister to be applied to the vertebres of the neck of a child, two years old, affected with this disease; who also fell into a continual fever, by which it almost became delirious, but received manifest relief from this remedy; and was afterwards in a few days freed from the fever. Being afterwards twice or thrice purged with an infusion of rhubarb, he also, beyond expectation, got rid of the rickets almost without any other remedies.

Yet this happy success did not induce *Glisson* to think more favourably of blisters: † for of such a remedy, *vis subito exeritur, & mox paulatim exhausta est; quod non usquequaque Chronico morbo quadrat*: “the power, is suddenly exerted, and quickly exhausted by degrees; wherefore it squares not every way with a chronic disease.” Whence he finally thus concludes: *Quocirca, vix medicamenti vesicatorii applicationem, in hoc curando morbo, admittimus, nisi acutus una complicetur morbus, qui sui causa hoc remedii genus exigat*: “Wherefore we hardly admit of it in the cure of this disease, unless an acute disease is complicated with it which requires this remedy upon its own account.”

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By

* De Rachitide, Cap. XXIX. p. 346.

† Ibidem, p. 348.

By mild vomits, sometimes prudently repeated.] Namely, If the symptoms shew that the stomach and other abdominal viscera are so loaded with bilious, phlegmatic, or other filthy matter, that they cannot properly execute their functions. It cannot indeed be denied, but that this may happen in the rickets; yet a vomit is not always necessary in the cure of the rickets: but indeed (see Sect. 1485, 6.) the abdomen is for the most part more swelled than natural in this disease, though the patients are rather lean; so that it may be believed, that the stomach and infarcted viscera have need of such an evacuation. But it was said, in the same section, that the liver in ricketty children is very large, and sometimes the spleen also, though these same viscera are well coloured, and appear sound and no ways indurated, or have any apparent defect; but the intestines are often found distended by wind after death, as well as in the living patient: from all which circumstances, it plainly appears, why the abdomen is found sometimes prominent and swelled in ricketty children.

Therefore it cannot possibly be concluded, that vomits are always needful, because the stomach is not always foul; nay often, as was said in Sect. 1486, 3. *appetitus & digestio fere illæsa*: “the appetite and digestion are very little hurt.” But as the increased liver is in the ricketty often observed to project beyond the ribs, would it be ever safe to expose this viscus to the violent concussions of the diaphragm and abdominal muscles? The liver is naturally safely defended by the incumbent ribs; hence a prudent use of mild vomits only is recommended when needful.

Hence the composition of a vomit may be seen in the *Materia Medica*, at this number, prepared of twenty grains of Ipecacuanha, by infusing them for a whole night in one ounce of wine, which, when strained off and sweetened with sugar, may be taken

in the morning. This produces a very gentle vomit; and if it is to be taken by young patients, the quantity of the Ipecacuanha may be safely much diminished, and the effect still remain. That famous physician *Samuel Pye* * says, that *Sydenham*, in whose time Ipecacuanha was not yet known, used an antimonial vomit, namely, *vinum benedictum*; but he seldom ventured to prescribe it for infants, as the body would be too violently disturbed by it, though he certainly knew, that they stood in need of an emetic. Though Ipecacuanha is by far milder than antimonial emetics, yet he had known twenty grains of this root operate very violently. That famous physician gave two grains of Ipecacuanha to a woman forty years of age, who wanted an emetic, and that small quantity caused her to vomit freely twice, and gave her great ease. He afterwards saw the like effects produced by the same small dose in many more adult and young persons; nay, half a grain has proved serviceable to new-born and young infants; he drew up, and caused to be printed, a regular table containing the names, ages, and number of vomitings of those who took this small dose of Ipecacuanha; therefore, such-like emetics may be attempted, if the symptoms indicate their use.

I believe that every prudent physician will more readily follow this method, than rashly venture upon rough medicines at so tender an age. *Buchner* † gave large doses of resin of scammony, emetic tartar, and golden sulphur of antimony, to a ricketty child of a year and a half old; but all in vain: *tandem, amplo cingulo mercuriali, cum spiritu vini sæpius fricata spina dorsi, & tinctura veneris Helvetii, quæ vitriolum cyprium spiritu vini solutum continet, ita data, ut vomituriendi quidem conatus, raros tamen vomitus, ciceret, & appetitum plane prosterneret, in integrum restituit: furibundam praxim:* “ At last by a large

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“ mercurial

* Medical Observat. and Inquiries, Tom. I. p. 240, & seq.

† Disputat. ad morbor. histor. oper. Haller. Tom. VI. p. 286.

“ mercurial girdle, frequent friction of the back-
 “ bone with spirit of wine, and Helvetius’s tinc-
 “ ture of copper, which is prepared by dissolving
 “ Cyprian vitriol in spirit of wine, given in small
 “ doses, and at such intervals of time as to excite
 “ violent nausea, but seldom fits of vomiting, and
 “ wholly to take away the appetite, he entirely cured
 “ the patient. A mad rash practice !” He excuses
 this rashness, because he believed the disease to be so
 desperate, that it required desperate remedies. But
 he also adds : *Id adhuc notabis, etsi doses tartari*
emetici & vitrioli veneri oblitus sim, me tamen obstu-
puisse, ad excitandam nauseam & inappetentiam ea co-
pia opus fuisse ; non propterea, quod stupido drastica
convenire, ex dogmatibus veterum ignorarem, sed quod
eam vim requiri, non augurarer : “ You will still re-
 “ mark, that though I have forgot the doses of
 “ tartar emetic and Cyprian vitriol, I was asto-
 “ nished that there was need of such a quantity to
 “ cause a nausea, and a want of appetite ; not
 “ that I was ignorant that such drastic remedies,
 “ agreeable to the received opinions of the antients,
 “ were suited but to fools and mad men, but that
 “ I should not foresee that such a large dose was
 “ required.” It appears very likely, that a child
 who was able to suffer so much might have been
 cured by a milder method.

By purges, and then corroborants, successively
 taken for some time.] It was before demonstrated,
 in Sect. 1480, and in 1484, that the rickets is a dis-
 ease distinct from the tumour and hardness of
 the abdomen, observed in young children after ha-
 ving suffered by long autumnal fevers. It was then
 proved from Sydenham’s own words, that he fre-
 quently tried to dissolve the tumour in the left side
 of the abdomen, in young children, by repeated
 purges ; but advises purges to be given only once or
 twice in the cure of the rickets, as he had known
 many

many children die in consequence of purges repeated oftener.

Whence there is likewise no composition of a purging remedy, to be taken at one single dose, inserted in the *Materia Medica* at this number; but rhubarb with yellow myrobalans, and a small quantity of troches of agaric, are infused cold in the common drink of children only: for it for the most part succeeds very happily in young children, if their common drink is rendered medicinal; they in the beginning indeed take them with some difficulty; but if no other drink is given to them when thirsty, they become reconciled to it sooner than can be imagined; nay, I have often known them reject pure beer after they had no more need of medicated drink.

Let strong beer, such as was before recommended, be used for this purpose. After the beer has been digested with these purging ingredients cold, during twenty four hours, it is fit for use; hence the belly is sometimes purged in the beginning, but as there is no intention of suddenly emptying the body, if it is observed that the body is rendered too laxative, the cathartic quality of the drink is weakened by diluting it with an equal quantity or more of pure beer, until the flux of the belly is rendered very moderate; for as the liver is always of a greater bulk than natural, an evacuation of the belly, no way debilitating, will be sufficient.

This effect will be very commodiously obtained, if the bottle in which the cathartic ingredients are contained is filled up with fresh beer every evening; for so the efficacy of these cathartics will be daily more and more diluted, as they are not usually renewed: this conveniency also attends it, that the unpleasant flavor of the medicine is daily rendered more palatable; and, when the force of the rhubarb and myrobalans is exhausted, there only remains a corroborant and astringent virtue, which, together

with the strong beer, is of great service in the cure of the rickets.

When water is used for common drink, this can be but very difficultly attempted; because water, naturally insipid and inodorous, is very unpleasant when impregnated with the flavour of purging remedies. Wherefore I have left the purity of water unviolated, and I have caused the purging ingredients to be infused in pure new hydromel, together with a small quantity of cinnamon, and have prescribed a spoonful, or more or less, of this infusion, according to the patient's age, morning and evening.

Finally, by a long continued use, &c.] The fabric of all the solid parts is lax; the nature of the humours, inactive, slimy, cold, and vapid; the membranes, vessels, and viscera, are soft and flaccid; the very bones have not their due consistency; all the methods and medicines hitherto recommended conduce to a change and amendment of these morbid qualities of the solid and fluid parts of the body.

Various simples, such as may be also seen in Sect. 28, 4, are recited in the *Materia Medica*, at this number, for the above purpose; all which may be tried in different forms. A medicinal drink, for common use, may be conveniently made of some of these. There are prescriptions in the *Materia Medica*, after which many other like compositions may be formed. A medicinal wine, to which mild and corroborant aromatics, and the filings of iron, are added, is prepared thus: let half an ounce of the above ingredients be infused without heat in eight pints of wine; an ounce of such wine may be given three times a day with success; and I have sometimes infused cinnamon in hydromel, together with a small quantity of the filings of iron, and have given a spoonful of this infusion once or twice a day, still augmenting the quantity for children of a more adult age.

But

But as young children often reject these remedies, physicians are obliged to administer such as contain great efficacy in a small bulk. The remedy described by Boyle, called *Ens Veneris*, was much renowned,* which that author recommended as a specific against the rickets, as already *ultra centum infantes, malo hoc ad conditionem usque desperatam laborantes, sanati hoc fuissent*, “ more than a hundred
 “ infants labouring under this disorder, divers of
 “ whom were looked upon to be in a most desperate
 “ condition, were cured by this remedy.” Nor did this remedy disturb these tender bodies in any manner, as he only gave two or three grains of it at a dose; yet it may be taken *in quibusdam tamen corporibus absque periculo ad viginti vel triginta*: “ by
 “ some constitutions to the amount of twenty or
 “ thirty grains, without the least danger, in any distilled water, small beer, or other convenient vehicle whatsoever.” It works when it causes a sensible operation by sweat, and partly by urine; and whenever it produces these effects, it is a certain specific against the English rickets.

This remedy has retained its fame in Italy, and the celebrated *Antonius Benevoli* † testifies to have seen the most happy success from it in a noble family, in which four boys had died of the rickets, just as they arrived at the age of two years; a fifth son, of the age of eleventh months, whose symptoms he enumerates, most certainly laboured under the same disease. A Genoese physician passing through Florence, being invited by Benevoli, advised the use of Boyle's *Ens Veneris*; which he believed to be a remedy composed of *sal armoniac*, and *Cyprian vitriol*, sublimed together. As this remedy was not sold in Florence, he sent for it from Genoa, and he gave

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two

* Robert. Boyle considerat. circa util. philos. natur. exper. Exerc. V. Cap. VI. p. 234.

† Dissertazioni & Osservazioni: tre delle quali sulla Rachitide, &c. p. 229.

two grains of it every day to his patient; after some weeks he gave three grains of it every day; and he went on in this manner for two months with some abatement of the disorder. But as he believed it useful to intermit the use of *Ens Veneris* now and then for some days, and then to begin it again, that was also tried; but the complaints increased: after eight or ten days, a bloody diarrhœa also came on, from which the patient went to stool fifteen or twenty times a day, and which was attended with a fever, little urine, and an emaciation of the whole body: then the *Ens Veneris* was again given; but as a dropsy also accompanied these disorders, the use of iron seemed necessary to be tried, though it had been fruitlessly applied to one of the brothers who died. Hence four grains of *croc. martis aperient.* were given in the morning, and three grains of *Ens Veneris* in the evening; but the *crocus martis* was not long given before a hæmorrhage from the nostrils ensued, which one evening remarkably increased with an inflammation of the face, and a strong delirium; from whence the cure was tried with *Ens Veneris* alone. Yet glysters composed of water impregnated with iron, and in which red roses were boiled, or in which an egg was diluted, were given to stop the flux. As the flux was increased by the use of flesh meats, he was nourished with boiled bread, with an egg now and then added to it: he was covered with a flannel shirt. He remained in this languishing state until the nineteenth month.

In some months after the child had attained two years of age, all his complaints in the space of a few days suddenly grew worse; his gums became black and putrid, livid spots covered various parts of his body, and his weakness was so excessive that he appeared at death's door. He was oppressed with extreme emaciation, weakness, and a diarrhœa; a decoction of the roots of *sarsaparilla*, to which some leaves of *scurvy grass* and *yva arthritica*, or fern, were

were added, together with two grains of *Ens Veneris* were given in the morning, and the same dose in the evening: and the use of breast milk with these medicines was persisted in for four months; and the child having now compleated the third year of his age, a great part of the complaints ceased; he still continued the use of *Ens Veneris*, and at length was entirely cured. Benevoli afterwards enumerates other similar cures which confirm the efficacy of *Ens Veneris* in the rickets, particularly if the decoction of of sarsaparilla, and breast milk, be also given.

Benevoli seems to have imagined, that there is little to be hoped from the use of iron in curing the rickets, for he believed that *Boyle's Ens Veneris* was made of Cyprian vitriol; certain it is that Boyle thus says: * *Quamvis Medicinæ hujus experimenta & Helmontii neutiquam convenire, eam tamen e censu ordinariorum eximendam esse, observaverimus, a Minerati, e quo ipsam eliciimus, Ens primum Veneris vocavimus:*

“ And though upon trials we found this medicine
 “ far short of what Helmont ascribes to his, yet
 “ finding it no ordinary one, we did for the mine-
 “ ral's sake, of which it is made, called it *Ens pri-*
 “ *imum Veneris*, or the first essence of copper.” But
 where he describes its preparation in the following
 page, he makes no mention of the Cyprian vitriol;
 but we in the receipt thus read: *Recipe vitriolum Dan-*
tiscanum (aut hujus defectu Ungaricum, vel Goslariense),
& calcina, donec calx colorem purpureum, aut rufum,
obtineat; “ Take Dantzic vitriol, (or in defect
 “ thereof Hungarian or Goslarian vitriol) and burn
 “ it until the calx grows of a purple or deep yel-
 “ low colour.” These are all vitriols of iron, and
 assume a purple or deep yellow colour from calci-
 nation. He then orders the calx to be freed as much
 as possible from every saline quality by repeated af-
 fusions of hot water, so that the metallic part alone
 may remain: he orders this calx, when edulcorated
 and

* R. Boyle considerat. circa util. philos. natur. exper. Exer. V.
 Cap. VI. p. 233.

and dried, to be intimately mixed with an equal quantity of powdered *sal armoniac*; then he orders this mixture to be sublimed for ten or twelve hours in a glass retort over a sand heat gradually increased; when the fire may be made as fierce as possible, until the bottom of the retort becomes red hot. He also remarks, that the sublimed flowers are of a yellow or reddish colour; and that if they are not of a deep yellow but pale, this for the most part happens because the ingredients were not intimately mixed together; in such case he advises the whole to be sublimed again, after the caput mortuum and sublimed flowers have been thoroughly mixed: but if these flowers are, not with the caput mortuum, *sed per se, iteratis resublimationibus tractentur, quod forsan mirabere, color & sublimatum, incrementi loco, diminuentur*, “but by themselves, repeatedly sublimed, the sublimated flowers and colour, which is wonderful, instead of being increased will be diminished.” If all these things are considered, it appears in no manner likely, that the said *Ens Veneris* was composed by Boyle of the vitriol of copper. No mention is made of an azure colour; and the author adds of this remedy *in quibusdam etiam corporibus absque periculo ad viginti vel triginta grana*, “in some bodies even twenty or thirty grains may be taken without danger.” Yet all skilful chemists know, that a remedy, composed of the vitriol of copper, can only be tried with safety in a small dose: but if the effects which happen when the newest filings of iron, with an equal quantity of *sal armoniac*, are treated in the like manner, are observed, it will appear, that the *Ens Veneris*, so famed in the cure of the rickets, acts by the medicinal powers of iron.

For when both these substances are pounded together in a glass mortar,* the longer the better, from these, which were before truly inodorous, exhales a subtle volatile

* H. Boerhaave Chem. Tom. II. Processu CLXIX. p. 447.

volatile and alkaline vapour; for whilst the acid of sal armoniac is attracted by the iron, the volatile alkaline part of it begins to be freed, and spontaneously evaporates. This powder is put into a dry, clean, large glass cucurbit, that it may be sufficiently spread over the bottom; an head and a receiver are fitted to the cucurbit, and the joints being previously luted with clay, the whole apparatus is placed on a sand heat, so as that the top of the glass only may stand uncovered; then by the application of two hundred and twenty degrees of heat, an acrid vapour rises, which produces an acrid, very penetrating, volatile, alkaline liquor. When nothing more will ascend, the fire may be augmented till the alembic grows red hot. White exhalations at first ascend, and then some of various colours, and the whole cavity of the alembic is also covered over with mixed and variegated colours, such as white, red, yellow, green, and blackish fumes, so as to resemble flowers in their various hues, and therefore in the shops are called *flores salis armoniaci martiales vocentur*; “martial flowers of sal armoniac,” which are removed as quickly as possible, and are put into a dry hot glass, which is immediately closed with a glass stopper, lest the flowers should immediately dissolve into a thickish, harsh, saline, golden-coloured liquor. It is certain, that the sal armoniac has taken up with it the divided iron, whilst it was sublimed into those flowers; which are endued with the medicinal virtue of the iron. Therefore the celebrated Boerhaave thus says*: *Flores hi habent vires fere eadem, quas in Ente Veneris dicto Boyleus laudaverat. Est enim hoc medicamentum, mirifice instaurans, calefaciens, aperiens, habetque metallici sulphuris apertum corpus*: “These flowers have almost the very same virtues which Boyle extolled in his *Ens Veneris*. For it is a wonderful restorative, heating, aperient medicine;

“dicine; and manifestly contains a metallic sulphur.” If all these matters are compared together, these two medicines seem to have the same efficacy; but *Boerhaave* only proposes this as a doubt, because *Boyle** a little after adds the following words concerning the same remedy: *Interim, cum colcothar hoc exaltatum exigua saltem dosi propinetur, ubi dextre paratum est, haud fecus quam, ex Helmontii sententia, Butleri Medicamen, Pauperum Medicina dici meretur: ut tamen bene præparetur, plus curæ, ne dicam artis, requirit, quam processum solum legens suspicari potest:* “In the mean time, as this exalted colcothar can be
 “taken only in a small dose, when rightly prepared,
 “it merits to be called the poor man’s medicine, no
 “less than Butler’s medicine, according to Helmont’s
 “opinion: yet a good preparation of it requires
 “more care and nicety, I will not say art, than
 “the reader can suppose from only reading the pro-
 “cess.” But if *Boerhaave*’s description is compared with that which *Boyle* gave us, the reason will plainly appear.

But as remedies often cannot without great difficulty be taken by young children, I more than once have used the *tinctura vitrioli martis aurea*,† “Golden
 “tincture of steel;” a few drops of this put into mountain wine, and given in the morning fasting, restore and rouse up the vital powers. It is made of salt of steel, burnt in a crucible to a calx of a purple colour, which is digested for the space of a month in a deep chemical phial, with twenty times its weight of the best dulcified spirit of sea salt. One drop of this tincture possesses an incredible power in producing a black colour. If, therefore the twentieth part of a drop is put into a cup of tea it will immediately turn it black. Now this black colour shews that there is iron in it; as chemistry teaches. But spirit
 of

* Considerat. circa utilitat. philos. natur. Exerc. V. Cap. VI.
 p. 235.

† H. Boerh. Chem. Tom. II. Processu CLXVI. p. 444.

of sea salt never entirely dissolves this calx, though fresh spirit be often poured upon it; from whence the spirit can only take up the soluble part of iron from the red calx of vitriol: wherefore some have believed, that this tincture was the potable gold of the antient chemists. I with great pleasure recollect to have cured numbers of ricketty children with biscuit, and good mellow generous beer, neither sour nor intoxicating, whilst I only sometimes gave three or four drops of this tincture once or twice a day, to the more adult.

This seems to be the reason why three compositions out of four, prescribed in the *Materia Medica*, contain iron in them; for I think it sufficiently appears from what has been said, that *Ens Veneris* contains the virtues of iron. The famous *Zaviani** happily used this remedy; but he rather chose to abstain from the use of the milk recommended with it by *Benevoli*, for he not without reason apprehended an acid acrimony in the rickets. The bones certainly lose their firmness in this disease, they swell about the epiphyses, and are incurvated; and it is apparent from experiments, that bones are softened by acids. It has been on the other hand observed, that those things which subdue that acid acrimony prove serviceable. The celebrated *De Haen*† gave the *Ostracodermata*, beaten into fine powder, to the amount of a scruple, two or three times a day in the cure of the rickets; and if the children enjoyed the benefit of a warm sun in a rural place, of motion in a child's coach frequently every day, of a dry bed and chamber, and of sound aliments, they in this manner were soon cured. But those who want the most part of these helps, are by this powder and motion alone, but indeed more slowly, though safely and certainly, cured; as long as a degeneration
of

* De Rachitide, Cap. IV. p. 135.

† Ration. Medendi, Part. IX. Cap. VI. p. 248.

of the whole frame has not rendered a cure impossible from any remedy hitherto known.

An infant, three years old, extremely weakened and swelled all over the body, laboured under the worst kind of the rickets: many remedies which are usually found serviceable in this disease were tried in vain. A grain of the extract of hemlock was given him morning and evening; on the fourth day four grains were given him every day; and he grew better. On the eighth day six grains were given him; he grew stronger, so that he could support himself upon his legs. The doses of the extract of hemlock were no farther augmented, as the child grew better every day.

In the space of a month this child, hitherto slothful, morose, and fearful, became active, and good-humoured; eat very heartily; the swelling of the joints decreased full two-thirds; and the colour of the face was ruddy and natural. About the expiration of the third month he was perfectly well from the use of hemlock, and grew fast, nor was any bad symptom ever after observed in him. †

As *madder-root*, eaten by animals, is capable of tinging their bones with a red colour, as was said upon another occasion, *Levrette*, ‡ the famous man-midwife, imagined that this remedy might be useful in curing the rickets, as it possesses some remarkable diuretic powers, and had proved beneficial in many chronic diseases; he therefore tried madder, and asserts, that he found it of use in this disorder.

The bones, too greatly softened in this disease, yield to the incumbent weight of the body, or are compressed by the adjacent hard bodies, and often become incurvated; whence wonderful deformities of the bones arise, which, if not remedied in time,
the

† Anton. Störck Libel. secund. de Cicutâ, p. 150.

‡ L'Art des Accouchemens, §. 1431. p. 244, & suiv.

the bones afterwards acquiring their usual hardness, remain during life incurable.

It is in the mean time to be particularly remarked, that the strength and plumpness much sooner return to the muscles than is believed, if the disorder is vanquished by a proper treatment; the greatest number of which take their origin from, or are inserted into the bones. But the muscular strength is great, and perfectly restores the figure of the bones in many, when the disease loses its power; then the protuberant epiphyses are diminished, the gibbous or crooked back-bone returns to its natural form, though no back-boards, stays, bandage, or machine have been applied to correct that deformity, which were directed to be applied by the nurse, by parents, who, solicitous about the shapes of their children, often do them more hurt than good, by squeezing the body too tight. We read a remarkable instance of such a cure in *Benevoli*,* relative to a sister of the noble girl whose case is already described. She was born very healthy, and had so good a colour during the first months, that every body hoped she would totally escape the calamities of her brothers: she was hardly a year old when she began to grow pale and ill; the abdomen swelled, the wrist, knees, and ancles grew protuberant; the thorax was raised; the clavicles were incurvated; the back bone became crooked; all the bones of the head were enlarged as if they were affected with an exostosis; the structure of all the bones of the body was vitiated: she also laboured under a complication of disorders, the scurvy, dropsy, a bloody diarrhoea, a scarcity of urine, a fever, and a violent cough, attended with vast anguish and a dread of suffocation. She lived in this miserable condition for above two years. *Benevoli* himself confesses, that the same remedies which cured her brother were applied to her during thirty months in

* *Dissertazioni & osservazioni, tre delle quali sulla Rachitide, &c. p. 236, & seq.*

in vain, so that he almost gave over their application, as there appeared no hope of a cure from them; but the tender mother, unwilling to spare any pains, or cost, the same method was still indefatigably persisted in.

The anguish and cough began at length to diminish, and the fever ceased, the flesh looked of a better colour, the tumour of the abdomen was diminished, the incurvated spine grew straight, the joints protuberated less, the elevated sternum grew flatter, the arched figure of the clavicles decreased, the bones of the head subsided; she first began to stand, and then to walk; at last, no trace of so severe and obstinate a disease remained; and she became equal in health and strength to other children of the same age.

The muscular strength also began to be restored, without the assistance of any artificial means; and the bones recovered their due form, which had been so very imperfect during thirty months.

This hath been confirmed by the observations of *Zaviani**, who justly forbids ricketty children to be put upon their feet, or made to walk, as long as the bones are soft, and their form may be easily spoiled by the weight of their own bodies, or any other external pressure: he would rather have them laid down horizontally, than carried in the arms of the nurse, because it is to be feared lest the spine should incline to this or that side, the bones be incurvated, and the shape of the cavity of the thorax be changed, from the compression of the breast by the hands of the nurse. It is customary in many places to lay them in beds fixed in little carts, which are drawn by the women who attend such ricketty children: thus these little patients can with certainty obtain the benefit of motion, and of the warm air, when the weather permits. When the disease begins to be diminished by proper remedies, the muscular motion, though

* De Rachitide, Cap. IV. p. 133, & seq.

though almost totally destroyed before, acquires vigour, and the children begin to move their joints, sit spontaneously upright in their little beds, and handle their play-things, move their legs, and of their own accord try to stand upon their feet. When I observed this inclination in them, I readily cherished it, though the bones of the legs were still incurvated; and the natural form returned to these bones, even without the assistance of any machine whatsoever.

Is immersion in a cold bath advantageous? It is well known, that cold baths were in use in former days, and every body knows, that their use is successfully recommended at present in certain diseases. In those countries where it is customary for boys to learn to swim, the use of cold bathing is frequent. The treatise on cold bathing by an English knight, Sir *John Floyer*, merits a reading, who extols the great virtue of this remedy against the rickets; nay, he even believed, that a neglect of cold bathing was to be numbered amongst the causes of this new disease, the rickets.

He demonstrates by many observations,* that in antient times the sacrament of baptism was administered to those who were to be baptized, by a triple immersion of the whole body, and not by one single aspersion of water as is now usual. It is certain, that it was formerly very customary to baptize people, of either sex, entirely naked, in the nearest river or pond; nay, he believes it is clear, that no baptismal fonts were erected until the third century of christianity, neither were they then erected in churches, but without the walls, which he proves from many circumstances. Hence he concludes, that these immersions in water were performed on those who were to be baptized in the open air.

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* *ψυχρολασσία*, or the history of Cold Bathing, pag. 50, & seq.

He also shews, that this baptism by immersion remained much longer unchanged in England than in other countries ; * for we read the following form of baptism in the rubrick, published in the reign of Edward the sixth, king of England, in the year 1547. *Sacerdos manibus suis prebendet infantem, rogabit nomen, & ter in aquam demerget : primo immerget latus dextrum ; secundo latus sinistrum ; tertio demerget faciem versus fontem : sic ut fiat discrete, & prudenter :* “ The priest shall take the infant in his hands, ask “ its name, and dip it three times in water ; he shall “ first dip the right side of it, secondly, the left side, “ and thirdly the face downwards towards the font ; “ so that it may be done discreetly and prudently.” But in the reign of queen Elizabeth, the rubrick permitted the infant to be only sprinkled with water, in case it was weak, and had need of private baptism.

As the author believed that the rickets might be cured by cold bathing, he hence imagined, that baptism, administered by immersion, preserved children from this disease, which so frequently appeared in England about the year 1620, when baptism by immersion began to be neglected.

But if it be considered, that infants are seldom seized with the rickets before the ninth month, does it appear credible, that a triple immersion in a short space of time, performed once only, could be profitable in a disease which arises so many months after ? If this kind of baptism had so fortified the body as not to be afterwards affected by the rickets, why was this new disease first observed in England, and why did it more powerfully increase there, than in other countries where this baptism by immersion had sooner ceased ; whence the rickets is still to this day called the English disease ? Neither is it proved, that the immersion of new-born children had been
always

* *Ἰσχυρολογία*, or the history of Cold Bathing, p. 60.

always performed in cold water. It appears not improbable from the English rubricks, that warm water was rather used for this purpose; nay, if the children were dipped in cold water, they were instantly rubbed dry with hot napkins, and their clothes put on again; whence the effect of the immersion in cold water could have been momentary only.

Nor was immersion judged necessary to the efficacy of the sacrament of baptism*. *Magnus* asked *Cyprian* the following question: *Quæstisti, mihi charissime, quid mihi de illis videatur, qui infirmitate & languore gratiam Dei consequuntur; an habendi legitimi Christiani, quod aqua salutari non loti, sed perfusi?* Respondet: *In sacramentis salutaribus, necessitate cogente, & Deo indulgentiam suam largiente, totum credentibus conferunt divina compendia:* “ You ask me, “ dear friend, my opinion concerning those, who, “ in an infirm languid state, receive the sacrament of “ baptism; whether they are to be accounted lawful “ christians, being not dipped, but only sprinkled “ with the salutary water? I answer: In the holy “ sacraments, necessity compelling, and God bestowing his indulgence, divine compendiums are equally “ efficacious to believers as the whole ceremony.”

Now if it be considered, that a new-born infant has remained nine months immersed in the warm liquor of the amnios within its mother's body, and must feel a very unusual sensation of cold, when baptized by three immersions in cold water, especially in the winter season; it must have seemed dangerous to parents, relations, and physicians, to expose such tender bodies to sudden cold, as the efficacy of baptism, in no respect whatever, depended on this cold; and therefore, beyond all doubt, warm water was often used for this purpose; as is the practice at present.

For that this sudden refrigeration induces no slight change on the human body, is evident from the ac-

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counts

* Floyer's history of Cold Bathing, p. 54.

counts of those who have prescribed cold bathing for young persons, and recommend it in the cure of the rickets.

In a letter sent from Newcastle to Sir John Floyer are the following words: *Ad cavendam & curandam Rachitidem nihil hic frequentius, & generatim utilius, est, quam infantes annuos, & adultiores, quotidie immergere frigido fluvio, mensibus Junio & Julio, vespertino tempore, per quatuordecim dies, vel diutius: si infans sit admodum debilis, unus alterve dies, imo & plures dies quandoque, intermittuntur, totius curationis tempore. Quidam integram immersionem adhibent bis vel ter, aliquod temporis spatium remittentes, ut inter singulas immersiones respirare possint; alii immergunt tantum ad cervicem usque, & pileos aquæ penitus immersos statim capiti imponunt, ut totum corpus, æque ac in prioribus, indusio & pileo madidis, tegatur. Omnia hæc conficiuntur tam brevi tempore quam fieri potest. Quidam infundunt aquam capiti, ut madescant toti; alii indusium & pileum penitus madefactâ nudato prius corpori applicant. Mox illis applicantur toti corpori & capiti lintea calida, lecto imponuntur, & valide sudant: sic manent tota nocte; mane siccum indusium & pileus datur: “ Nothing is more common in this “ country, and proves more generally successful for “ the preventing and curing of the rickets, than to “ plunge children, of a year old and upwards, in a “ cold river, and in the months of June and July, “ every evening, for a fortnight, or longer, intermit- “ ting a day or two or more in the whole, if the child “ be very weak. Some dip them twice or thrice “ over head and ears, with their shifts and night-caps “ on, giving them time to breathe between each im- “ mersion. Others dip them no farther than the “ neck (because the water is apt to stop their breath) “ and dip their night-caps thoroughly, and put them “ wet upon their heads, that the whole body may be “ covered with the wet shift and cap, equally as in “ the*

“ the former method. All this is done as quick as
 “ possible. Some pour water upon the child’s head,
 “ that he may be wetted all over ; others content
 “ themselves with dipping only the shirt and night-
 “ cap in water, and put them on wet upon him.
 “ As soon as the children are dipped, they, with
 “ their wet cloaths on, are wrapped up in warm
 “ blankets over their head and whole body, and
 “ put immediately to bed, which instantly throws
 “ them into a violent sweat. . In this condition they
 “ lie all night ; and in the morning they have a dry
 “ shirt and cap put on. The children in three mi-
 “ nutes time recover themselves of the fright which
 “ dipping puts them into.” If such a terror happens
 in children of a year old, and upwards, from this
 sudden cold, can cold bathing be safely tried upon
 new-born infants ?

He likewise remarks, *quod validis illis sudoribus
 reddantur debiliores ; sed tamen gradatim vires recu-
 perent, datis gelatinis cornu cervi, pedum vitulinorum
 &c. ita ut circa tempus, quo folia arborum cadunt, in-
 tegre sani sint, vel melius se habeant. Si hæc curatio
 unico anno non successerit, sequenti anno repetenda erit ;
 tuncque generaliter respondet votis :* “ that though for
 “ the present they may be weaker from these violent
 “ sweats, yet they by degrees recover their strength
 “ by the help of strengthening jellies of hartshorn,
 “ and calves feet, &c. infomuch, that about the fall
 “ of the leaf, they are either perfectly recovered, or
 “ sensibly better. If one year’s dipping proves not
 “ successful, ’tis repeated the next year, which gene-
 “ rally answers expectation.”

Whence this disease does not seem to be easily
 removed by this means : a cure thereof may be tried
 with the greatest hopes of success by safer methods.

Are liniments, and of what kind, proper ?] Every
 thing hitherto recommended in the cure of this dis-
 order, seems principally directed to strengthen the
 too

too great flaccidity of the solids, and to amend the inert, slimy, vapid, cacochymy of the fluids. Wherefore liniments, which mollify and relax, are proper. For it has been demonstrated, that much benefit may be expected from dry frictions with hot flannel, impregnated with aromatic effluvias; which are particularly applied to the abdomen, and the whole length of the spine of the back.

It is true indeed, that we read in Sydenham,* *Cum vero, quæ exterius admoventur, tenera infantum corpora facile penetrent, proindeque sanguinem ipsum qualicumque virtute sua penitus efficiant, e re erit, in tumoribus, qui ventrem eorum occupant, sive scrophulis, sive Rachitidi veræ, originem illi debeant, linimentis uti, quæ sanguinem & viscera corroborandi, ac pariter labem aliquam morbificam iis inductam delendi, vi pollent:*

“ But as external medicines easily penetrate the tender bodies of children, and consequently communicate all their virtue to the blood, whatever it be, it is proper in swellings of the abdomen, whether they proceed from scrophulous disorders, or the genuine rickets, to have recourse to liniments, that may strengthen the blood and viscera, and remove any morbid taint wherewith they are affected:” but the liniment, (the composition of which is to be seen in p. 430 of Swan’s Sydenham) is made of aromatic, bitter, and strengthening herbs, infused with hog’s lard and tried mutton suet, in an earthen vessel upon hot ashes for twelve hours. Now the use of such might easily be borne, but it is to be noticed, that such remedies are less beneficial than is generally thought. For they are prepared with fresh gathered herbs, with the addition of wine, and, after a proper digestion, the fatty substances ought to boil till all the aqueous moisture is exhaled; and thus the fragrantcy of the ingredients is evaporated also.

IF

* Dissert. Epistol. p. 511.

If at the same time what has been said at §. 1480, and §. 1484, be taken into consideration, the reason will evidently appear, why liniments are seldom used in the cure of the rickets.

F I N I S.





